DESIGN GUIDE

THIRD EDITION

MASTICORD

STRUCTURAL BEARING PAD

JVI INC.

THE BEARING PAD PEOPLE

ABOUT THE GUIDE

Welcome to the third edition of the **MASTICORD™** *Design Guide.*

When **MASTICORD™** *was originally developed and the first design guide published in 1982, it filled a glaring need for better bearing pad materials.* **MASTICORD™** *was quickly recognized as a reliable, economical, engineered product with an easy to use design procedure.*

In an ongoing effort, **MASTICORD™** *was improved in 1984 and a much expanded design guide was published to "provide predictable performance parameters which address 'real world' field conditions."*

Since then,* MASTICORD™ *has enjoyed such a successful performance record that we now know that it is capable of higher performance limits than originally thought. Consequently, this all-new third edition of the guide has been issued. Not only does it contain new loading information based on new testing but also expanded information on the design of* MASTICORD™ *into a slide bearing system.

JVI is the original developer of a high quality, low cost, engineered random-oriented fiber bearing pad material — **MASTICORD™**. *It is hoped that the new information contained in this guide will demonstrate to the user the ongoing commitment to excellence that* ***is*** *the spirit of JVI.*

Jim Voss

James R. Voss
President

JVI INC.

THE BEARING PAD PEOPLE

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AN INTRODUCTION TO **MASTICORD™**

MASTICORD™ is a homogeneous blend of highly ozone-resistant rubber elastomer reinforced by a dispersion of unrestrained synthetic fabric fibers cured together to form a tough, durable and economical bearing pad. The material is to be used under all types of structural members to provide distribution of load and allow for structural movement. **MASTICORD™** can be used in its plain form for smaller movements, or fabricated with a Teflon® coating for larger movements.

MASTICORD™ was developed and engineered by **JVI** in 1981. Until then, the industry's masticated reinforced elastomer had varying degrees of product quality and was viewed by many as inconsistent and therefore unreliable. In addition, there was very little structural design information and it could not be used confidently. **MASTICORD™** is an engineered product which exhibits consistent property values and has been widely used since its development as a structural bearing pad. Other manufacturers have tried to duplicate this product, but none have the extensive research, testing and long-term performance data necessary to achieve a truly engineered material.

Prior to the development of **MASTICORD™**, the most popular bearing pad materials used in structural applications were unreinforced elastomers, **JVI's Newlon™**, which is AASHTO grade, and the preformed fabric duck pad, **JVI's Capralon™**. These materials are still available; however, most applications can now use **MASTICORD™** which has a better performance and economic value. In particular, the unreinforced elastomers, non-AASHTO grade, are no longer recommended for use in precast concrete structures by PCI and the AASHTO-grade pad now has a lower compressive stress limitation.

Teflon® is a registered trademark of the DUPONT CO.

MASTICORD™ is available in many forms. Most commonly used is the plain form. **MASTICORD™** epoxy bonded to Teflon, **JVI's Dynalon™** will provide slide bearing performance. **MASTICORD™** can also be reinforced or laminated with stainless or carbon steel plate for high load bearing capacity. Any shape can be provided, and slots or holes can be cut in the material.

The in-service field evaluation since 1981 proves the durability and performance exceed the original development expectations. This third edition of the ***MASTICORD™*** *Design Guide* makes use of in-service field information and new test data to improve the criteria and methods of design. By specifying **MASTICORD™** the designer can now be assured of a consistent high standard quality product which meets a predetermined set of physical properties. Test reports documenting these physical properties can be provided to the designer. The quality control and design procedures included in this guide will assure **MASTICORD™** can be confidently designed into structural applications.

A COMMON SENSE APPROACH

A NEW PERSPECTIVE

The history of elastomeric structural bearing pads is relatively short, dating back to about the mid-fifties. As in any young industry, phenomena regarding performance are constantly surfacing which lead to improvements for meeting these needs.

At this point in time, it is becoming clearer what an important role bearing pads play in their structural functions and how serious the problems can be if bearing pads are not properly designed. Fortunately, the entire consideration of bearing pads is evolving from a "necessary nuisance" to the realization that proper application can have a direct relationship to long-range structural performance.

A step forward in this evolution has been to recognize that beyond theoretical design considerations lie the realities of performance conditions that until now have not been fully recognized. And, rather than viewing these conditions as performance "problems," experience and common sense dictate that they now be viewed simply as additional components to be considered in the design process.

REDEFINING THE TASK

The choice of elastomers for bearing pads is a sound one. How they are designed and applied, however, determine success or failure. In developing **MASTICORD™**, the objective was to understand the behavior of a bearing pad, formulate a material that optimizes the behavior criteria and develop engineering procedures to aid the designer in selecting the appropriate size.

Bearing pad performance relates to two functions, load distribution and movement. The two forces which relate to these functions are compression and shear. Ideally, a bearing pad should be strong in compression and soft in shear. In compression, the pad should have an ultimate load capacity that will handle strains caused by non-uniform loading. Concurrently, in shear, the pad should exhibit the least possible resistance while not compromising that necessary compressive strength. The pad should allow a shear force to be dissipated through the pad before friction is overcome and sliding occurs. **MASTICORD™** was formulated to meet these criteria.

In the case of unreinforced elastomers, high stresses and severe load conditions have proven to be excessive since the pad does not possess the necessary reinforcement or strength. Based on the type and severity of the "overload" condition, one or both of two modes of failure can be expected in unreinforced elastomers:

1. Pads can be expected to "walk" out from under structural members. This phenomenon is a result of three influences:

    a. The expected expansion and contraction caused by temperature cycles, shrinkage and creep of concrete exert a shear load on the pad which can cause the coefficient of friction to be exceeded.

    b. The inherent elastic memory of unreinforced elastomers promotes a migration to an uncompressed state.

    c. Low compressive stresses, less than 400 psi, do not confine the horizontal movements of the pad and promote walking of the pad.

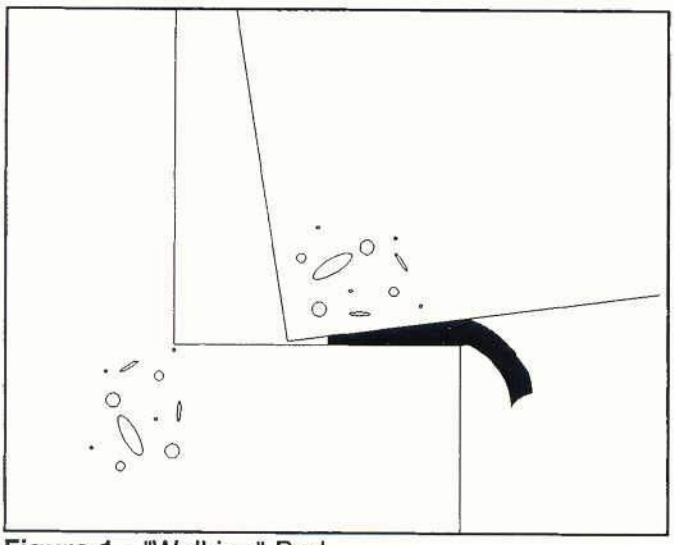


Figure 1 - "Walking" Pad

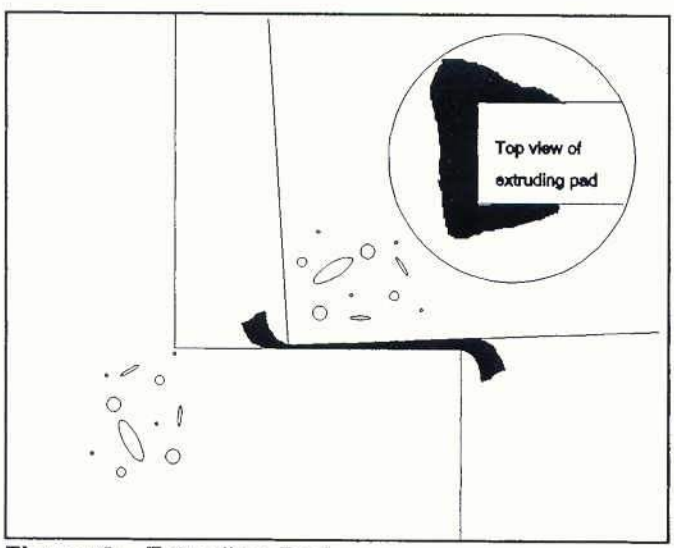


Figure 2 - Extruding Pad

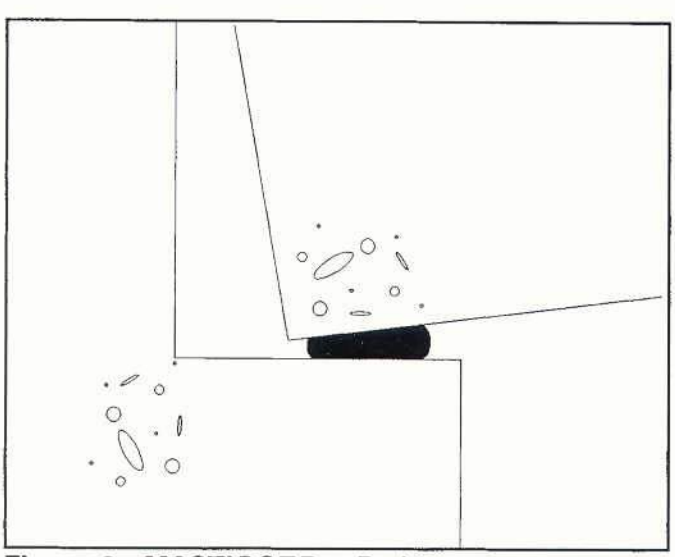


Figure 3 - **MASTICORD™** Pad

Together these influences produce a ratcheting movement which, in effect, causes pads to "walk," as shown in Figure 1.

2. Pads can be expected to ultimately extrude out from under the structural member when loaded to large stresses, as shown in Figure 2.

Either condition will eventually minimize load distribution and may allow concrete spalling to occur.

NON-UNIFORM LOADING (NUL)

A key to redefining the functions of a bearing pad is to acknowledge and address the existence of Non-Uniform Loading (NUL), as shown in Figures 1, 2 and 3. This common condition occurs in the presence of rotation due to camber, structural loads, and construction tolerances. NUL results in non-uniform stress distribution and therefore higher stresses and strains on partial areas of the bearing pads.

The application of **MASTICORD™** in the presence of NUL is the common sense approach. It acknowledges that NUL exists routinely; therefore, promoting the use of a pad capable of higher loadings without fear of overstressing.

Under uniform loading in laboratory tests, **MASTICORD™** consistently exhibited an ultimate compressive strength of 8,000 psi or greater. Moreover, the unique disbursement of unrestrained reinforcing fibers translates to a remarkably high shear strain ability of up to 200 percent. Together these properties allow **MASTICORD™** to exhibit a very desirable characteristic of flow which deforms to accommodate the load, both vertically and horizontally, without losing its ability to support the load.

These performance features provide a custom fit for most varying conditions, thus reducing the consideration of NUL from a problem to that of a design parameter.

NOMENCLATURE

NOTE: PCI nomenclature used where applicable. Loads are at non-ultimate, service or working levels.

SYMBOL	UNITS	DEFINITION
A	radian	Angle of rotation between upper and lower bearings
b	inches	Width of bearing pad, usually perpendicular to the flexural span
b_1	inches	Loaded width of bearing pad, usually perpendicular to the flexural span, under uniform bearing
b_t	inches	Width of upper element for **Dynalon™** Slide Bearings
D	inches	Total deflection or camber at center of span
d_h	inches	Horizontal deformation of bearing pad or anticipated structural movement
d_v	inches	Vertical deformation of bearing pad
d_{vmax}	inches	Maximum vertical deformation of bearing pad
e_c	%	Compressive strain in percent, at any location, compressive deformation divided by the initial thickness multiplied by 100, see Figure 9
e_{max}	%	Maximum compressive strain in percent, maximum compressive deformation divided by the initial thickness multiplied by 100
e_s	%	Shear strain in percent, total horizontal deformation divided by the initial thickness multiplied by 100
G	psi	Shear modulus, slope of the shear stress strain curve at any point
k_t	$1/rad^2$	Thickness constant, see table in Equation 4
L	inches	Span length
l_p	inches	Length of bearing plate
N	pounds	Total allowable non-ultimate shear working load
R	-	Reduction factor for compressive load with angle of rotation
S_{nr}	psi	Compressive stress allowed without rotation, total allowable compressive load divided by loaded area, non-ultimate stress
S_{ap}	psi	Applied non-ultimate compressive stress, total applied compressive load divided by loaded area, non-ultimate stress
SF	-	Shape factor, the actual loaded area of the pad divided by the perimeter free to bulge, see Figure 7
S_s	psi	Shear stress, total shear load divided by the compressive loaded area, non-ultimate stress

t	inches	Initial thickness of pad
u	in./in./°F	Thermal coefficient
V_{ap}	kips	Applied non-ultimate vertical load (compressive load)
V_{nr}	kips	Total allowable non-ultimate vertical working load at zero angle of rotation (compressive load)
V_{ar}	kips	Total allowable vertical non-ultimate load on pad with angle of rotation (compressive load)
w	inches	Bearing pad length, usually parallel to flexural span
w_1	inches	Loaded bearing pad length, usually parallel to flexural span, under uniform, non-rotation bearing
w_2	inches	Loaded bearing pad length, usually parallel to flexural span, under rotation
w_t	inches	Length of upper element, **Dynalon™** Slide Bearings

ENGINEERING

SOURCE AND PURPOSE

For purposes of objectivity and credibility, JVI contracted the services of Raths, Raths & Johnson, Inc., Structural Engineers of Willowbrook, Illinois, U.S.A., to undertake a research program to provide a comprehensive Design Guide for **MASTICORD™**. All testing was performed in their engineering laboratory and was conducted by Ms. Barbara J. Smith, S.E., P.E., under the direction of Charles H. Raths, S.E., Senior Principal. Testing was performed under both uniform and non-uniform loading conditions. The performance specifications are based upon the maximum values obtained from these tests. The design equations are a simplified empirical representation of the test data which conservatively approximates actual behavior.

DEALING WITH ELASTOMERS

MASTICORD™ is a composite material consisting of an elastomer with random-oriented synthetic fibers. For structural applications, the elastomer has to be stiff enough to resist typical compressive loads but soft enough to allow shear deformation. Synthetic fibers are used to strengthen the elastomer. **MASTICORD™** has achieved the proper proportions of these materials in order to optimize the structural performance.

MASTICORD™ is an isotropic material in the lateral dimensions but exhibits non-linear behavior with respect to shape factor and thickness. Therefore, it should be noted while hard numbers are cited in determining both physical and performance parameters, they represent a lower bound approximation based upon many repeated tests. It is not unlikely that results of two different test series of the same specimens would vary slightly due to subtle differences in the testing set-up, technique, or even personnel. For practical purposes, these small variances are considered insignificant and should be recognized as a natural phenomenon of dealing with elastomers.

The *PCI Design Handbook* is referenced in this design guide wherever practical in order to accept and use industry standards. The latest edition, Edition 3, of the *PCI Design Handbook* recommends a compressive stress limit of 1,500 psi on a random fiber reinforced elastomeric pad. This very conservative value is meant for all brands, engineered and non-engineered materials and results from a lack of in-depth testing. **MASTICORD™**'s extensive test program has proven it has greater capabilities than this limit suggests. Since it is an engineered product, the performance parameters and design equations presented here control the design of **MASTICORD™**.

MASTICORD™ BEHAVIOR

The role of a bearing pad is to transfer and distribute load between two structural elements. In addition, it allows for horizontal and rotational movements in order to minimize the effects of shrinkage, creep and temperature.

Ultimate load is commonly defined as the point where a material can no longer sustain load or accomplish its purpose. In most materials, ultimate load is accompanied by cracking or severe deformations. Unlike other materials, **MASTICORD™** will continue to transfer and distribute load after it has torn. Also, horizontal movement can be realized after the pad has slid. Therefore, typical ultimate load criteria are not justified.

In order to achieve optimal performance, long-term durability and reliability, and to define the service performance parameters, **MASTICORD™** has undergone several test programs. The results of these tests have led to the selection of limiting strains. These limits control the amount of tearing, permanent deformation and slippage allowed on the pad. Refer to the section titled *Test Program Summary* for further information on testing and result evaluation.

Typical observations of pads under compressive load include bulging, spreading and tearing. It is necessary to understand when these aspects occur and what they mean. As a pad is loaded in compression, the edges start to bulge and the surface area of the pad increases as it spreads out. When the strain exceeds 40 percent, the reinforcing fibers will start to de-bond and pull away from the exterior surfaces of the pad. As shown in Figure 4, this is a localized behavior which may extend 1/8 inch into the pad. As load is increased, the elastomer will start to tear at the voids left by the de-bonded fiber. Fibers will also tear and permanent deformation is the result. Most damage is concentrated at the edges of the pad, depending on the amount of strain present. A strain of 60 percent will typically cause tears extending from the portion of the pad having the highest strain, refer to Figure 5. The centermost portion of pad is the last to see damage since the surrounding pad helps stiffen and suppress bulging.

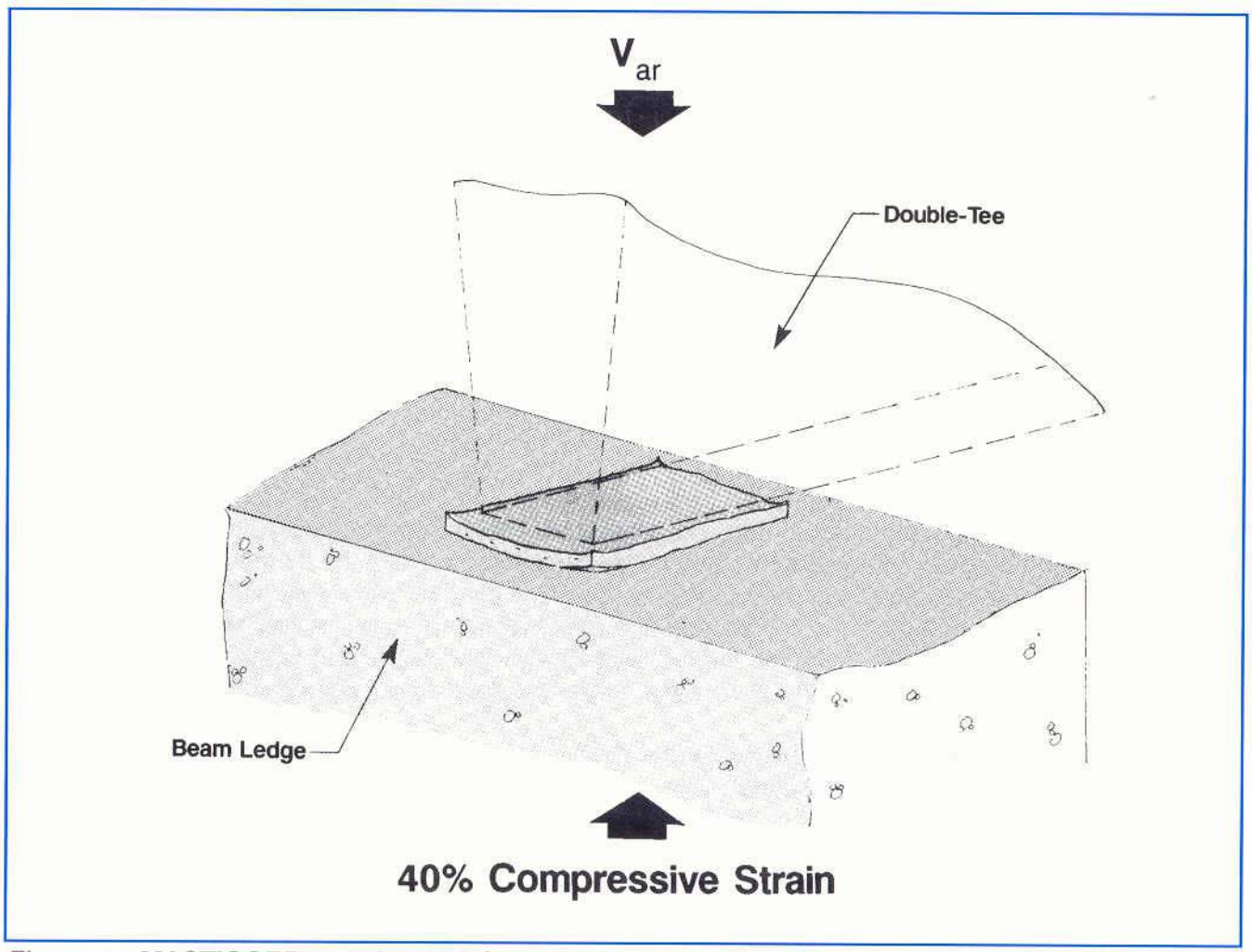


Figure 4 - MASTICORD™ under 40% Compressive Strain

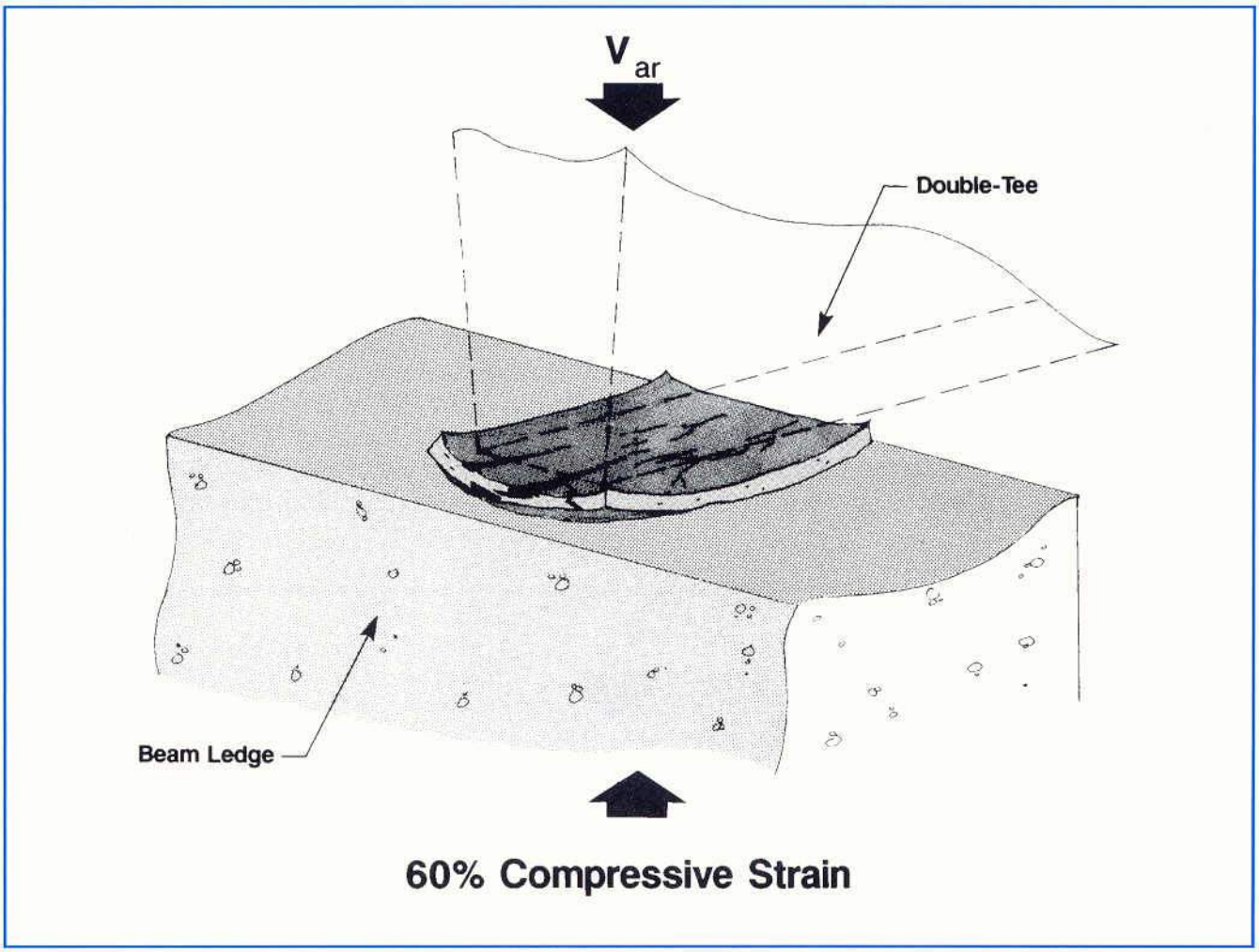


Figure 5 - **MASTICORD™** under 60% Compressive Strain

In order to assess pad performance in the field, measurements of the compressed thickness should be made and maximum strain calculated by dividing the compressed thickness by the initial thickness. In addition, the amount of tearing and de-bonding of fibers will give indications as to how much damage can be expected throughout the pad. Portions of pad not loaded are non-functioning, so it is not critical if these areas are broken away from the loaded area. Debonded fibers and small amounts of tearing are not critical since **MASTICORD™** will continue to transfer load under this condition.

When a **MASTICORD™** bearing pad is subjected to shear load, the lateral translation between the top and bottom fibers of the pad is noticeable. As the friction between the supporting surface and the pad is exceeded, the pad will start to slip. This slippage either can continue until the pad walks out from under the structural component or will stop as the pad regains a frictional hold. The pad will maintain a shearing strain of 75% before slipping occurs. Testing proved strains greater than 100% could be maintained, at this point the pad edges were observed to roll over upon themselves. The slipping friction coefficient between concrete and **MASTICORD™** varies with the smoothness of the structural elements, temperature and compressive load. Slipping friction coefficient, that at which slippage occurs initially, for pads subjected to horizontal deformation is in the range of 0.2 to 0.5 and the static coefficient of friction, determined by the classic inclined plane, is 0.7 to 0.9. **MASTICORD™** will not sustain a permanent deformation due to shear load.

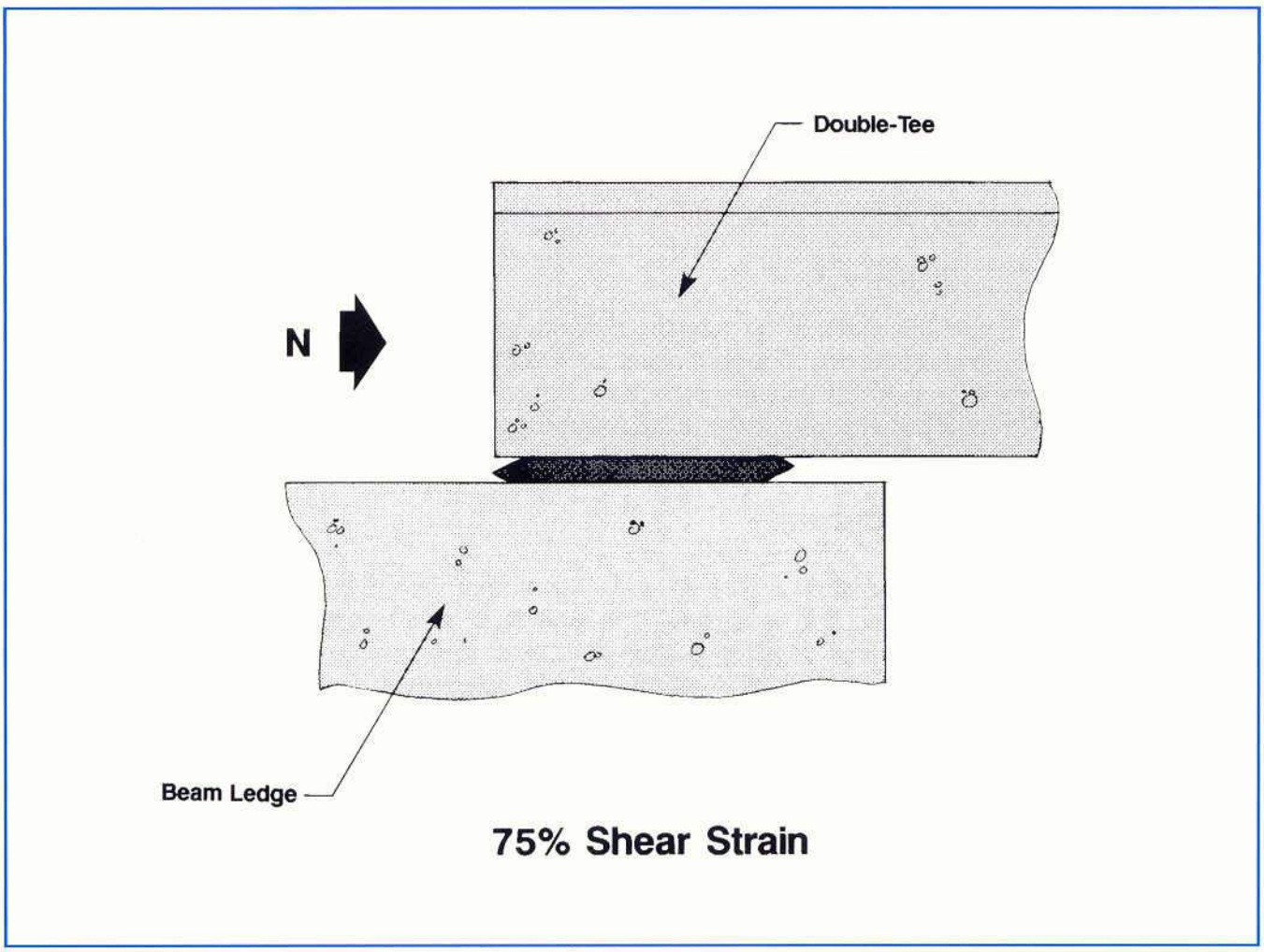


Figure 6 - **MASTICORD™** under 75% Shear Strain

DESIGN PARAMETERS

Performance parameters have been established for compression, shear, creep and friction behavior. In addition, thickness guidelines have been established to help the designer. A detailed discussion on how these parameters were determined may be found in this guide under *Test Program Summary*.

Performance Parameters:

Compression	40% maximum strain
Shear	75% maximum strain
Creep	Irrelevant after initial application of load
Friction	0.7 to 0.9 static coefficient (by classic inclined plane) 0.2 to 0.5 "slipping" coefficient (at which slippage initially occurs)
Shape Factor	Influenced and limited by 40% maximum compressive strain

General Pad Thickness Recommendations:

Minimum Thickness*	3/8"
Non-Beam Members spanning less than 60 ft.	3/8"
Non-Beam Members spanning more than 60 ft.	3/8" to 1/2"
Beams spanning less than 40 ft.	1/2"
Beams spanning more than 40 ft.	5/8" to 3/4"

* A minimum thickness of 1/4" can be used but applies only to conditions of ideal bearing. In recognizing the many opportunities for less than ideal bearing conditions, manufacturing variations, erection inconsistencies and construction tolerances, the use of 3/8" as a minimum thickness will enhance the prospects for satisfactory bearing.

MASTICORD™ DESIGN PROCEDURE

The **MASTICORD™** design procedure is basically an analysis approach. It is necessary to know the size of bearing pad prior to starting the analysis. The pad size may be obtained by employing the recommended minimum thickness or using judgement based upon design experience. The design procedure is a working load (service load) method. **Do not use ultimate loads.**

1. Select the bearing pad length and width, see Figure 7. The selection of w and b should not exceed the dimensions of the upper or lower bearing surfaces. The w and b pad dimensions can be checked by using a nominal bearing stress, uniform or non-uniform, of 1,500 psi. It is advisable to select b as large as possible.

2. Determine the actual loaded area of the pad, b_1 and w_1, see Figure 7 for non-rotation bearing.

3. Select the bearing pad thickness. This can be done by using the table in the design parameters section. The thickness should also be checked against the maximum shearing strain. Determine the horizontal deformation, d_h, the pad will be subjected to such as that induced by temperature, creep and shrinkage for concrete and by temperature for steel applications. The magnitude of d_h can be estimated from the *PCI Design Handbook*, or by other standard engineering reference sources. Calculate the pad thickness by using $t=d_h/0.75$, but at least 3/8 inch.

4. Determine the angle of rotation, A, between the upper and lower bearing surfaces due to prestressing, volume changes, applied loads and/or construction tolerances; see Figure 8. Construction tolerances should consider levelness of upper and lower mating surfaces. All pad designs should consider an angle of rotation, if only due to construction tolerances, use 0.03 radians minimum unless analyses prove otherwise. All design load cases and combinations should be considered. Typical construction tolerances are cited in the *PCI Design Handbook*. To estimate the angle of rotation from camber calculation or construction tolerances, see the section in this guide titled *Rotation Design Equations*.

5. Calculate the maximum allowable compressive load without rotation, V_{nr}, the given pad size can tolerate using Equation 2 (see Page 13). In Equation 2, use $e_{max}=40\%$ for design or graphically select the compressive stress from Figure 10 or 11.

6. Calculate w_2, the bearing length under rotation, using Equation 6 (see Figure 9). Check that w_2 is less than or equal to w_1.

7. Check that the compressive stress, S_{nr}, Equation 3, does not exceed 8,000 psi for plain **MASTICORD™** and 2,500 psi for **DYNALON™**. If the limit is exceeded, use the stress limit to back calculate V_{nr} by solving for V_{nr} in Equation 3.

8. Calculate the maximum allowable compressive load with rotation, V_{ar}. Use Equation 4 or Figure 12 to calculate the reduction factor, R and Equation 5 to calculate V_{ar}.

9. Compare V_{ar}, the allowable compressive load with rotation, to V_{ap}, the applied load. If V_{ar} is greater than V_{ap}, the pad design is acceptable.

10. The maximum allowable shear load can be determined from Equation 9 or by using Figure 13. For Equation 9, calculate the shear strain, e_s, using Equation 7 and the applied compressive stress, S_{ap}, using Equation 8. Equation 8 considers the actual compressive load applied to the pad to determine the maximum allowable shear load since higher compressive stresses induce larger shear stress capacities.

NOTE: **MASTICORD™** bearing capacities can exceed the ultimate bearing stress of concrete. These concrete stresses must be checked as they will in many cases, control the bearing design.

DESIGN EQUATIONS

Eq. 1. Shape Factor

$$SF = \frac{b_1 w_1}{2(b_1 + w_1)t}$$

Eq. 2. Maximum Allowable Compressive Load Without Rotation, kips

$$V_{nr} = \frac{(0.6SF + 2)e_{max}^{1.8} b_1 w_1}{1000}$$

Use $e_{max} = 40\%$ for design

Eq. 3. Compressive Stress, psi

$$S_{nr} = \frac{1000 V_{nr}}{b_1 w_2}$$

Load limit for plain **MASTICORD™**, psi $\leq 8{,}000$
Load limit for **Dynalon™**, psi $\leq 2{,}500$

Eq. 4. Rotation Reduction Factor

$$R = \frac{1}{(k_t A^2 + 1)}$$

where:

t	1/8"	1/4"	3/8"	1/2"	5/8"	3/4"	1"
k_t	4000	2500	1500	500	400	325	275

Eq. 5. Allowable Compressive Load With Rotation, kips

$$V_{ar} = V_{nr} R$$

Eq. 6. Loaded Bearing Length, see Figure 9

$$w_2 = \frac{e_c t}{100 \tan(A)} \leq w_1$$

Use $e_c = e_{max} = 40\%$ for design

Eq. 7. Shear Strain, percent

$$e_s = \frac{d_h}{t} \times 100$$

$\leq 75\%$ for design

Eq. 8. Compressive Stress Applied, psi

$$S_{ap} = \frac{V_{ap}}{b_1 w_2} \times 1000$$

Eq. 9. Shear Load, pounds

$$N = 0.012\ S_{ap}\sqrt{e_s}\ b_1 w_2$$

Eq. 10. Shear stress, psi

$$S_s = \frac{N}{b_1 w_2}$$

Eq. 11. Shear modulus, psi

$$G = \frac{100\, S_s}{e_s}$$

Loading Conditions Defining Shape Factor

Note: Any combination of plan and elevation views may exist.
(Shaded portion indicates loaded area.)

$$SF = \frac{b_1 w_1}{2t(b_1 + w_1)}$$

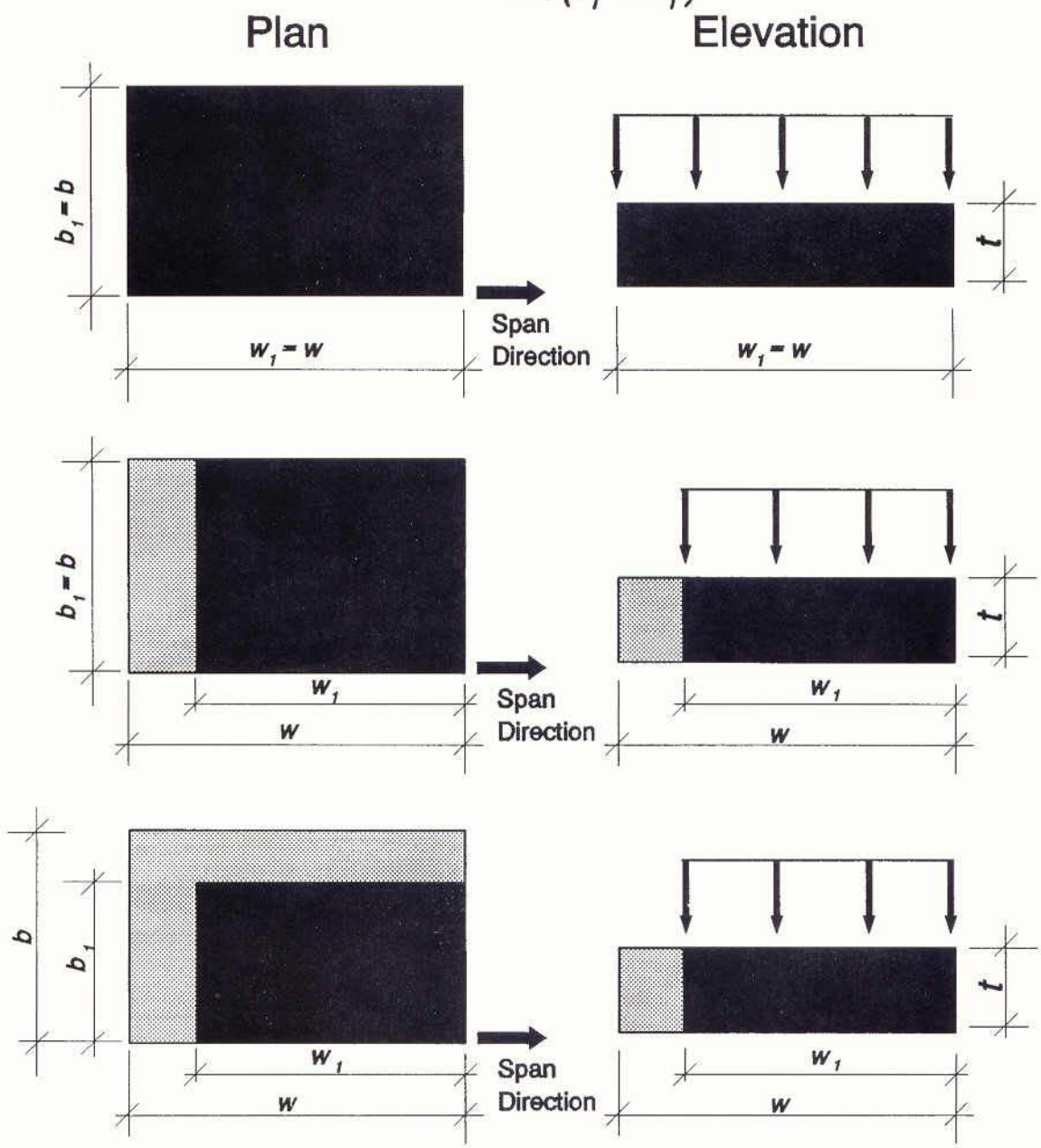
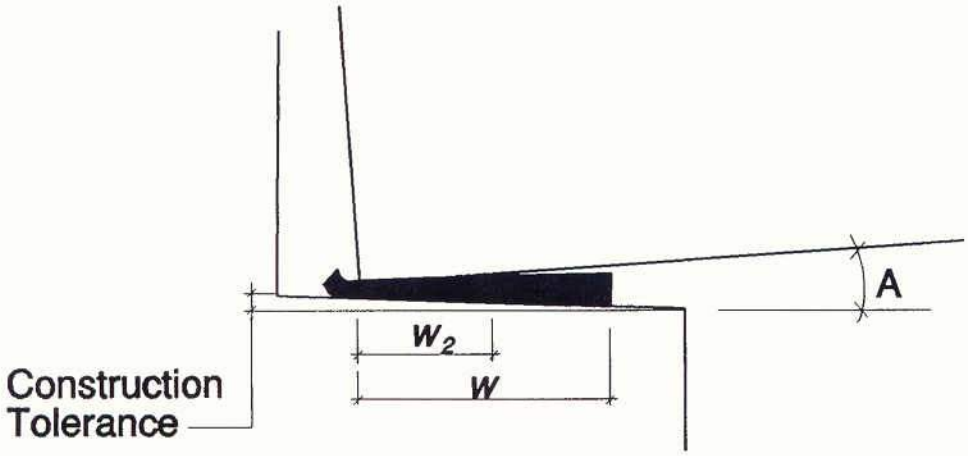
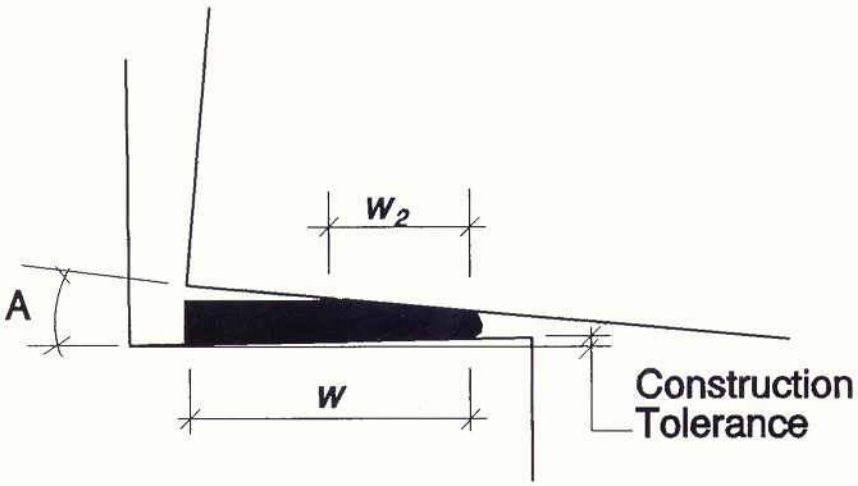


Figure 7 - Definition of Shape Factor and w_1

Examples of Rotation Conditions Causing Non-Uniform Bearing



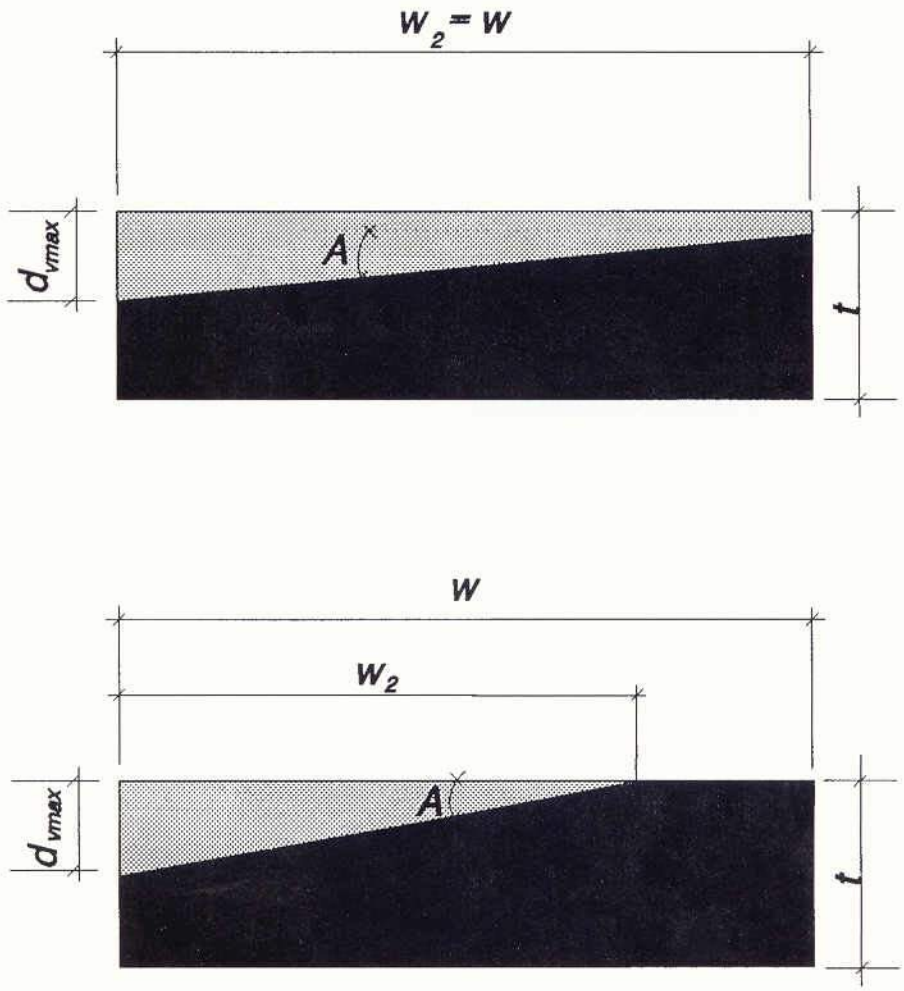
Maximum Camber and Tolerance Rotation Angle



Maximum Deflection and Tolerance Rotation Angle

Figure 8 - Rotation Conditions

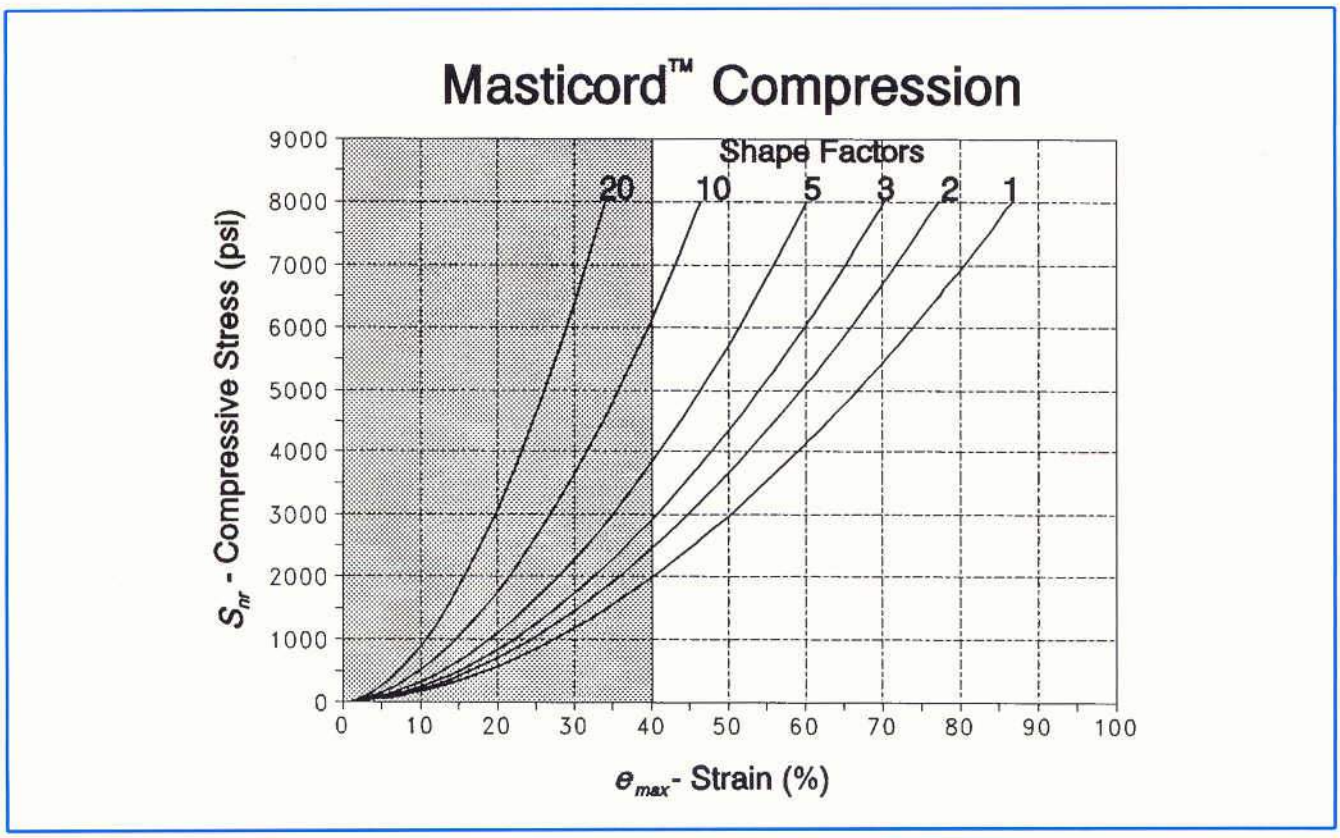
Non-Uniform Bearing



$$e_{max} = \frac{d_{vmax} \times 100}{t} \leq 40\%$$

$$w_2 = \frac{d_{vmax}}{\tan A} = \frac{e_{max}\, t}{100 \tan A} \leq w_1$$

Figure 9 - Definition of w_2



ıure 10 - Compressive Stress vs Strain Curves

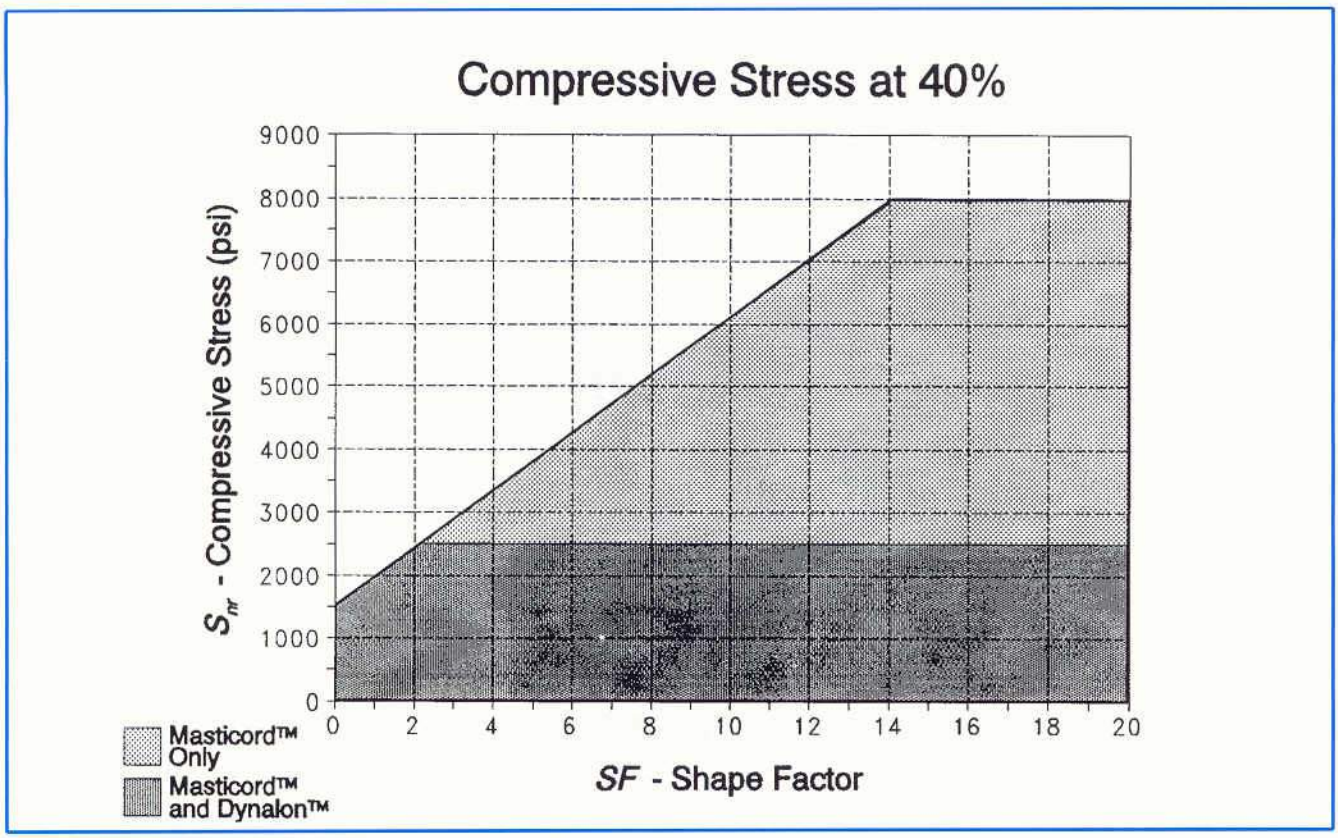


Figure 11 - Compressive Stress vs Shape Factor Plot

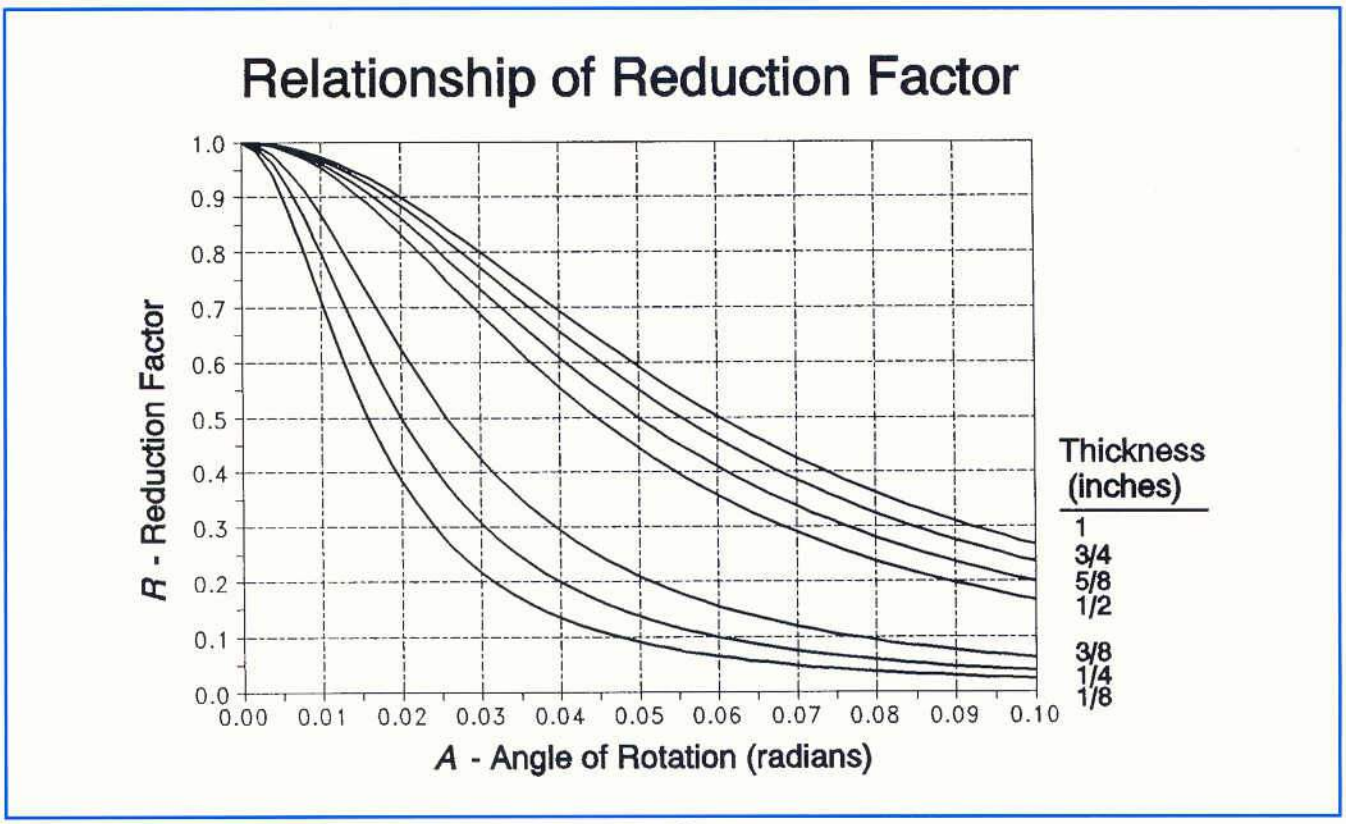


Figure 12 - Reduction Factor vs Angle of Rotation Curves

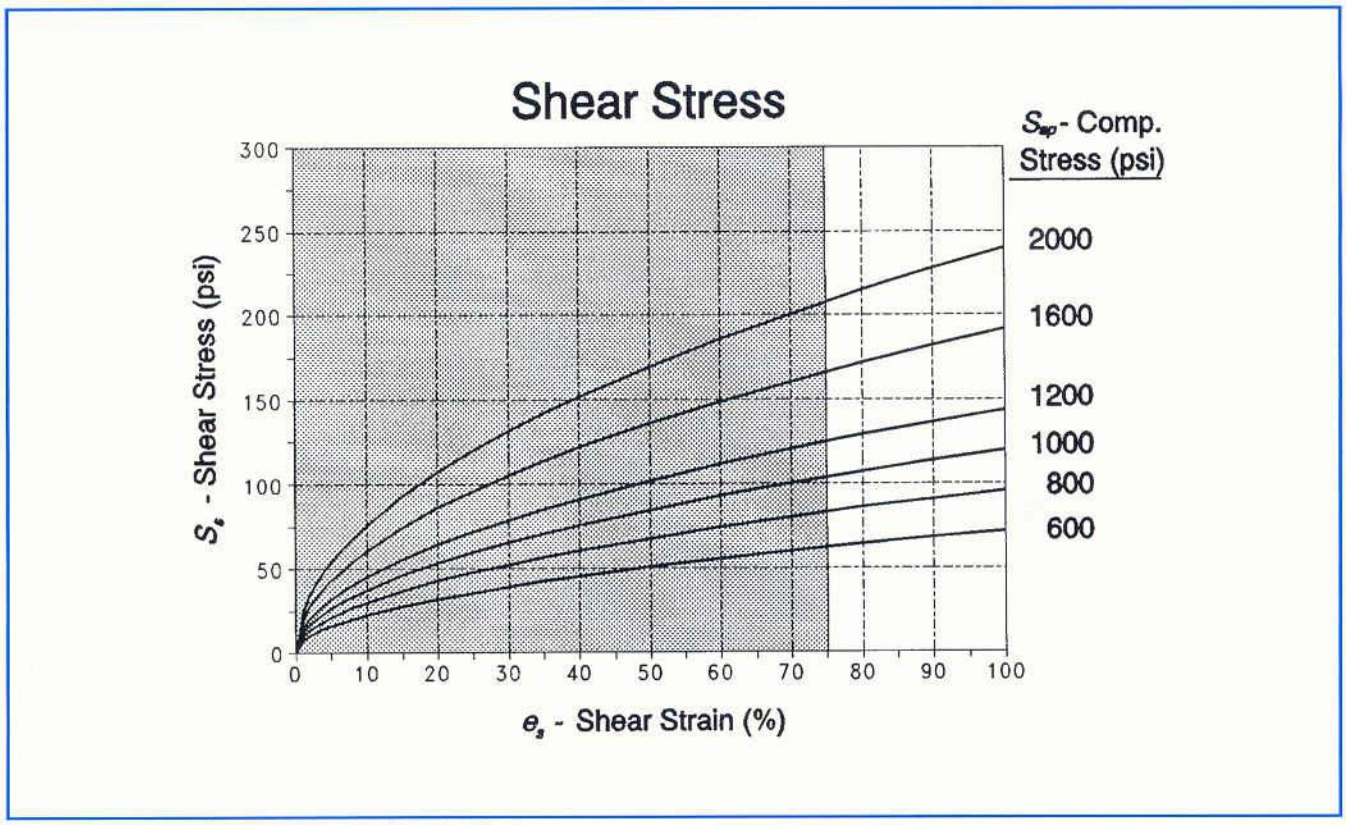


Figure 13 - Shear Stress vs Strain Curves

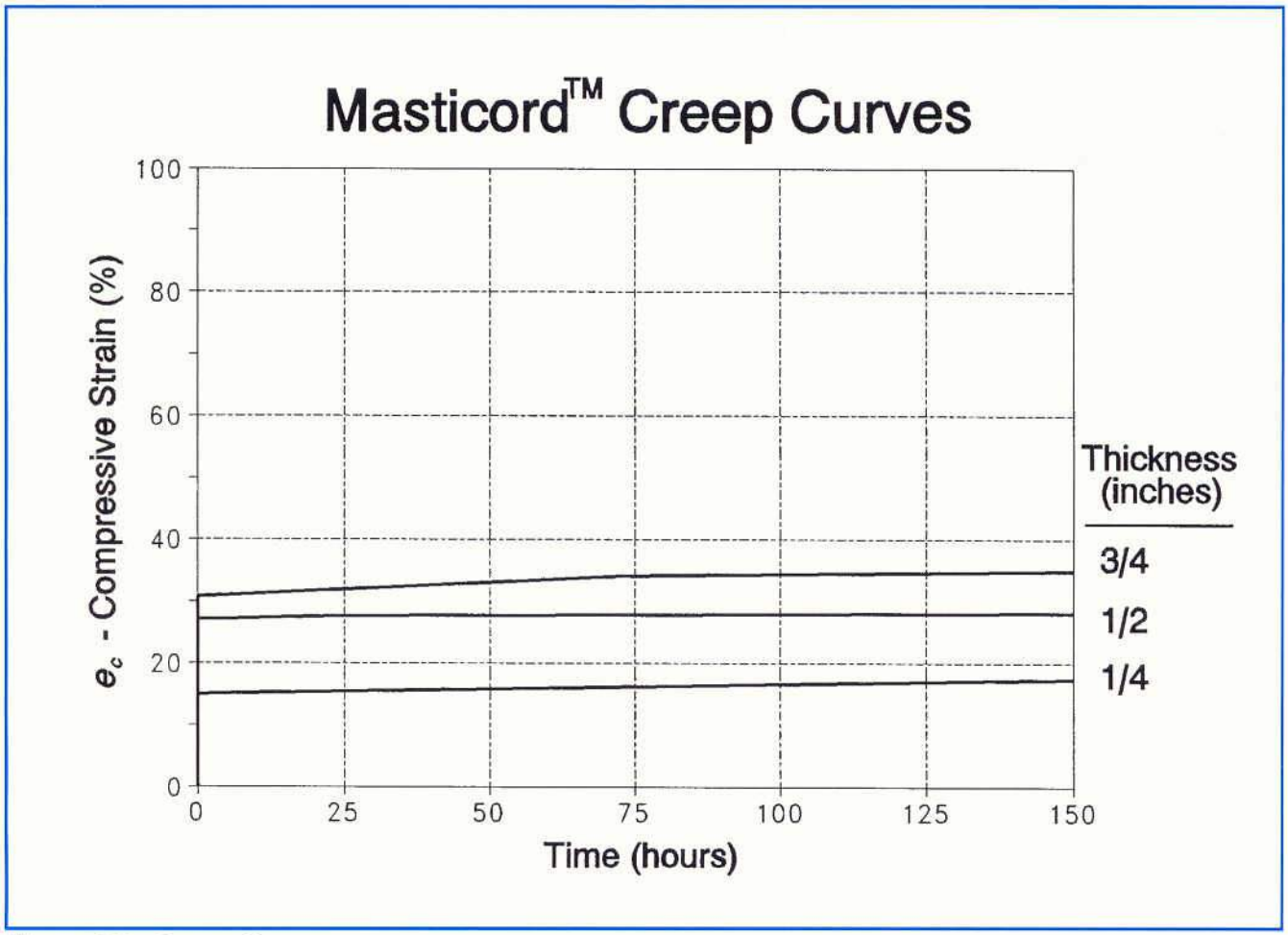


Figure 14 - Creep Curves

ROTATION DESIGN EQUATIONS

The determination of rotation angle is an integral part of determining the allowable working load a pad can support. The end rotation of a member is due to prestressing, dead load, live load and bearing surface tolerances. The end rotation of most members can be approximated by assuming the member takes a parabolic shape. The rotation at the end of the member is then calculated from the camber (*D* in inches) and the span length (*L* in inches). The *PCI Design Handbook*, Edition 3, (PCI) lists camber for various member types, these cambers can be used in Equation 12 as *D* to calculate the approximate rotation (accurate to 0.01 radians). These cambers are calculated using dead load and superimposed dead load at erection and long-time; live load is not included.

Tolerances are also specified in PCI. The camber tolerance is ±1/4 inch per 10 feet, with a ±3/4-inch maximum for tees and ±3/4-inch maximum for beams. The camber tolerance can be substituted for *D* in Equation 12 below. For bearing plate tipping and flushness the tolerance is ±1/8 inch each for the double-tee and beam. Equation 12 below presents the parabolic approximation for the angle of rotation in terms of camber. Equation 13 presents the angle of rotation in terms of bearing plate length (l_p).

Eq. 12. Parabolic Curvature

$$A = \frac{4D}{L}$$

Eq. 13. Bearing Plate Tolerance
Where l_p = *length of plate*

$$A = \arcsin\left(\frac{1}{8l_p}\right)$$

DESIGN TABLES FOR PLAIN **MASTICORD™** AND **MASTICORD™** FOR SLIDE BEARINGS

Two sets of tables are provided to give the maximum allowable loads for common sizes of plain **MASTICORD™** and **MASTICORD™** for slide bearings. Plain **MASTICORD™** has a design stress limit of 8,000 psi, while **MASTICORD™** for slide bearings has a stress limit of 2,500 psi. The design procedure is simplified by entering the tables with the pad size, thickness and known angle of rotation. Comparing the known applied service load to the maximum allowable load given in the tables will determine whether a given pad size is sufficient.

The tables are arranged by thicknesses: 1/4 inch, 3/8 inch, 1/2 inch, 5/8 inch, 3/4 inch and 1 inch. The pad sizes are shown on the far left of the table, w is shown in the first column, b is listed in the second column. The actual loaded width, w_1, which depends on the angle of rotation, is accounted for within the tables. The angles of rotation are shown across the top of each table from 0 to 0.08 radians in graduations of 0.01 radians. A linear approximation may be used to interpolate between the angles given. The maximum allowable working load is limited by 40 percent maximum compressive strain at the pad's extreme edge, or 8,000 psi.

The tables allow the user to readily determine if a certain bearing pad can satisfy the given non-uniform conditions. For example, assume the following for a plain **MASTICORD™** beam bearing:

- $t = 1/2"$
- $w = w_1 = 5.0"$
- $b = b_1 = 16.0"$
- $A = 0.025$ *radians*
- $V = 105.0$ *kips*

The allowable working load from the table at 0.02 radians is 218.6 kips and at 0.03 radians is 180.9 kips. Linear interpolation between these values yields 199.8 kips, which is greater than the applied working load of 105.0 kips. Therefore, this is an acceptable pad design. If the allowable working load from the table had been less than 105.0 kips, a pad of different dimensions would be required.

The procedure is the same for using the **MASTICORD™** for slide bearings tables. The thickness shown on each table refers to the **MASTICORD™** only, **DYNALON™** thickness is added to this for the total lower element thickness.

PLAIN **MASTICORD™**
MAXIMUM LOAD V_{ar} (kips)

MASTICORD™ Thickness (t) = 1/4 inch (K_t = 2500)

Dimensions (inches)		Angle (A) radians								
Width w_1	Length b_1	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08
3.0	3.0	26.2	20.9	13.1	8.1	5.2	3.6	2.6	2.0	1.5
3.0	3.5	31.6	25.3	15.8	9.7	6.3	4.4	3.2	2.4	1.9
3.0	4.0	37.2	29.8	18.6	11.5	7.4	5.1	3.7	2.8	2.2
3.0	4.5	43.0	34.4	21.5	13.2	8.6	5.9	4.3	3.2	2.5
3.0	5.0	48.8	39.0	24.4	15.0	9.8	6.7	4.9	3.7	2.9
3.0	6.0	60.6	48.5	30.3	18.6	12.1	8.4	6.1	4.6	3.5
3.0	7.0	72.6	58.1	36.3	22.3	14.5	10.0	7.3	5.5	4.1
3.0	8.0	84.8	67.8	42.4	26.1	17.0	11.7	8.5	6.4	4.7
3.0	10.0	109.5	87.6	54.7	33.7	21.9	15.1	10.9	8.3	5.9
3.0	12.0	134.4	107.5	67.2	41.4	26.9	18.5	13.4	10.1	7.0
3.0	16.0	184.8	147.8	92.4	56.9	37.0	25.5	18.5	13.8	9.4
3.0	20.0	235.5	188.4	117.8	72.5	47.1	32.5	23.6	17.2	11.7
3.5	3.0	31.6	25.3	15.8	9.7	6.3	4.4	3.2	2.4	1.8
3.5	3.5	38.4	30.7	19.2	11.8	7.7	5.3	3.8	2.9	2.1
3.5	4.0	45.4	36.3	22.7	14.0	9.1	6.3	4.5	3.4	2.3
3.5	4.5	52.6	42.1	26.3	16.2	10.5	7.3	5.3	3.9	2.6
3.5	5.0	59.9	47.9	29.9	18.4	12.0	8.3	6.0	4.3	2.9
3.5	6.0	74.8	59.8	37.4	23.0	15.0	10.3	7.5	5.2	3.5
3.5	7.0	90.0	72.0	45.0	27.7	18.0	12.4	9.0	6.0	4.1
3.5	8.0	105.4	84.3	52.7	32.4	21.1	14.5	10.5	6.9	4.7
3.5	10.0	136.9	109.5	68.4	42.1	27.4	18.9	13.3	8.6	5.9
3.5	12.0	168.8	135.0	84.4	51.9	33.8	23.3	16.0	10.3	7.0
3.5	16.0	233.3	186.7	116.7	71.8	46.7	32.2	21.3	13.8	9.4
3.5	20.0	298.5	238.8	149.3	91.9	59.7	41.2	26.6	17.2	11.7
4.0	3.0	37.2	29.8	18.6	11.5	7.4	5.1	3.7	2.6	1.8
4.0	3.5	45.4	36.3	22.7	14.0	9.1	6.3	4.5	3.0	2.1
4.0	4.0	53.9	43.1	26.9	16.6	10.8	7.4	5.3	3.4	2.3
4.0	4.5	62.5	50.0	31.3	19.2	12.5	8.6	6.0	3.9	2.6
4.0	5.0	71.4	57.1	35.7	22.0	14.3	9.8	6.7	4.3	2.9
4.0	6.0	89.6	71.7	44.8	27.6	17.9	12.4	8.0	5.2	3.5
4.0	7.0	108.3	86.6	54.1	33.3	21.7	14.9	9.3	6.0	4.1
4.0	8.0	127.3	101.8	63.7	39.2	25.5	17.6	10.7	6.9	4.7
4.0	10.0	166.1	132.9	83.1	51.1	33.2	22.1	13.3	8.6	5.9
4.0	12.0	205.7	164.5	102.8	63.3	41.1	26.5	16.0	10.3	7.0
4.0	16.0	286.0	228.8	143.0	88.0	57.2	35.3	21.3	13.8	9.4
4.0	20.0	367.2	293.8	183.6	113.0	73.4	44.1	26.6	17.2	11.7

w_1 and b_1 are non-rotation contact area dimensions, see Figure 7

PLAIN **MASTICORD™**
MAXIMUM LOAD V_{ar} (kips)

MASTICORD™ Thickness (t) = 1/4 inch (K_t = 2500)

Dimensions (inches)		Angle (A) radians								
Width w_1	Length b_1	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08
4.5	3.0	43.0	34.4	21.5	13.2	8.6	5.9	4.0	2.6	1.8
4.5	3.5	52.6	42.1	26.3	16.2	10.5	7.3	4.7	3.0	2.1
4.5	4.0	62.5	50.0	31.3	19.2	12.5	8.6	5.3	3.4	2.3
4.5	4.5	72.8	58.3	36.4	22.4	14.6	9.9	6.0	3.9	2.6
4.5	5.0	83.4	66.7	41.7	25.6	16.7	11.0	6.7	4.3	2.9
4.5	6.0	105.1	84.0	52.5	32.3	21.0	13.2	8.0	5.2	3.5
4.5	7.0	127.4	101.9	63.7	39.2	25.5	15.4	9.3	6.0	4.1
4.5	8.0	150.3	120.2	75.1	46.2	30.1	17.6	10.7	6.9	4.7
4.5	10.0	197.1	157.7	98.5	60.6	39.4	22.1	13.3	8.6	5.9
4.5	12.0	244.9	195.9	122.4	75.3	48.0	26.5	16.0	10.3	7.0
4.5	16.0	342.3	273.9	171.2	105.3	64.0	35.3	21.3	13.8	9.4
4.5	20.0	441.2	353.0	220.6	135.8	80.0	44.1	26.6	17.2	11.7
5.0	3.0	48.8	39.0	24.4	15.0	9.8	6.6	4.0	2.6	1.8
5.0	3.5	59.9	47.9	29.9	18.4	12.0	7.7	4.7	3.0	2.1
5.0	4.0	71.4	57.1	35.7	22.0	14.3	8.8	5.3	3.4	2.3
5.0	4.5	83.4	66.7	41.7	25.6	16.7	9.9	6.0	3.9	2.6
5.0	5.0	95.6	76.5	47.8	29.4	19.1	11.0	6.7	4.3	2.9
5.0	6.0	121.0	96.8	60.5	37.2	24.0	13.2	8.0	5.2	3.5
5.0	7.0	147.3	117.8	73.6	45.3	28.0	15.4	9.3	6.0	4.1
5.0	8.0	174.2	139.4	87.1	53.6	32.0	17.6	10.7	6.9	4.7
5.0	10.0	229.5	183.6	114.8	70.6	40.0	22.1	13.3	8.6	5.9
5.0	12.0	286.2	229.0	143.1	88.1	48.0	26.5	16.0	10.3	7.0
5.0	16.0	402.2	321.8	201.1	123.8	64.0	35.3	21.3	13.8	9.4
5.0	20.0	520.3	416.2	260.1	160.1	80.0	44.1	26.6	17.2	11.7
6.0	3.0	60.6	48.5	30.3	18.6	12.0	6.6	4.0	2.6	1.8
6.0	3.5	74.8	59.8	37.4	23.0	14.0	7.7	4.7	3.0	2.1
6.0	4.0	89.6	71.7	44.8	27.6	16.0	8.8	5.3	3.4	2.3
6.0	4.5	105.1	84.0	52.5	32.3	18.0	9.9	6.0	3.9	2.6
6.0	5.0	121.0	96.8	60.5	37.2	20.0	11.0	6.7	4.3	2.9
6.0	6.0	154.2	123.4	77.1	47.5	24.0	13.2	8.0	5.2	3.5
6.0	7.0	188.8	151.1	94.4	57.4	28.0	15.4	9.3	6.0	4.1
6.0	8.0	224.5	179.6	112.3	65.6	32.0	17.6	10.7	6.9	4.7
6.0	10.0	298.4	238.7	149.2	82.0	40.0	22.1	13.3	8.6	5.9
6.0	12.0	374.6	299.7	187.3	98.4	48.0	26.5	16.0	10.3	7.0
6.0	16.0	531.5	425.2	265.7	131.2	64.0	35.3	21.3	13.8	9.4
6.0	20.0	692.1	553.7	346.1	164.1	80.0	44.1	26.6	17.2	11.7

w_1 and b_1 are non-rotation contact area dimensions, see Figure 7

PLAIN **MASTICORD™**
MAXIMUM LOAD V_{ar} (kips)

MASTICORD™ Thickness (t) = 1/4 inch (K_t = 2500)

Dimensions (inches)		Angle (A) radians								
Width w_1	Length b_1	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08
8.0	3.0	84.8	67.8	42.4	24.6	12.0	6.6	4.0	2.6	1.8
8.0	3.5	105.4	84.3	52.7	28.7	14.0	7.7	4.7	3.0	2.1
8.0	4.0	127.3	101.8	63.7	32.8	16.0	8.8	5.3	3.4	2.3
8.0	4.5	150.3	120.2	75.1	36.9	18.0	9.9	6.0	3.9	2.6
8.0	5.0	174.2	139.4	87.1	41.0	20.0	11.0	6.7	4.3	2.9
8.0	6.0	224.5	179.6	112.3	49.2	24.0	13.2	8.0	5.2	3.5
8.0	7.0	277.6	222.1	138.8	57.4	28.0	15.4	9.3	6.0	4.1
8.0	8.0	333.0	266.4	160.0	65.6	32.0	17.6	10.7	6.9	4.7
8.0	10.0	448.8	359.1	200.0	82.0	40.0	22.1	13.3	8.6	5.9
8.0	12.0	570.0	456.0	240.0	98.4	48.0	26.5	16.0	10.3	7.0
8.0	16.0	822.6	658.1	320.0	131.2	64.0	35.3	21.3	13.8	9.4
8.0	20.0	1084.2	867.4	399.9	164.1	80.0	44.1	26.6	17.2	11.7
10.0	3.0	109.5	87.6	54.7	24.6	12.0	6.6	4.0	2.6	1.8
10.0	3.5	136.9	109.5	68.4	28.7	14.0	7.7	4.7	3.0	2.1
10.0	4.0	166.1	132.9	80.0	32.8	16.0	8.8	5.3	3.4	2.3
10.0	4.5	197.1	157.7	90.0	36.9	18.0	9.9	6.0	3.9	2.6
10.0	5.0	229.5	183.6	100.0	41.0	20.0	11.0	6.7	4.3	2.9
10.0	6.0	298.4	238.7	120.0	49.2	24.0	13.2	8.0	5.2	3.5
10.0	7.0	371.7	297.4	140.0	57.4	28.0	15.4	9.3	6.0	4.1
10.0	8.0	448.8	359.1	160.0	65.6	32.0	17.6	10.7	6.9	4.7
10.0	10.0	612.1	489.7	200.0	82.0	40.0	22.1	13.3	8.6	5.9
10.0	12.0	784.6	627.6	240.0	98.4	48.0	26.5	16.0	10.3	7.0
10.0	16.0	1148.8	919.0	320.0	131.2	64.0	35.3	21.3	13.8	9.4
10.0	20.0	1530.2	1224.1	399.9	164.1	80.0	44.1	26.6	17.2	11.7
12.0	3.0	134.4	107.5	60.0	24.6	12.0	6.6	4.0	2.6	1.8
12.0	3.5	168.8	135.0	70.0	28.7	14.0	7.7	4.7	3.0	2.1
12.0	4.0	205.7	164.5	80.0	32.8	16.0	8.8	5.3	3.4	2.3
12.0	4.5	244.9	195.9	90.0	36.9	18.0	9.9	6.0	3.9	2.6
12.0	5.0	286.2	229.0	100.0	41.0	20.0	11.0	6.7	4.3	2.9
12.0	6.0	374.6	299.7	120.0	49.2	24.0	13.2	8.0	5.2	3.5
12.0	7.0	469.5	375.6	140.0	57.4	28.0	15.4	9.3	6.0	4.1
12.0	8.0	570.0	456.0	160.0	65.6	32.0	17.6	10.7	6.9	4.7
12.0	10.0	784.6	627.6	200.0	82.0	40.0	22.1	13.3	8.6	5.9
12.0	12.0	1013.6	768.0	240.0	98.4	48.0	26.5	16.0	10.3	7.0
12.0	16.0	1502.5	1024.0	320.0	131.2	64.0	35.3	21.3	13.8	9.4
12.0	20.0	1920.0	1280.0	399.9	164.1	80.0	44.1	26.6	17.2	11.7

w_1 and b_1 are non-rotation contact area dimensions, see Figure 7

PLAIN **MASTICORD™**
MAXIMUM LOAD V_{ar} (kips)

MASTICORD™ Thickness (t) = 3/8 inch (K_t = 1500)

Dimensions (inches)		Angle (A) radians								
Width w_1	Length b_1	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08
3.0	3.0	22.0	19.2	13.8	9.4	6.5	4.6	3.4	2.6	2.1
3.0	3.5	26.4	23.0	16.5	11.3	7.8	5.6	4.1	3.2	2.5
3.0	4.0	31.0	26.9	19.3	13.2	9.1	6.5	4.8	3.7	2.9
3.0	4.5	35.5	30.9	22.2	15.1	10.5	7.5	5.6	4.3	3.4
3.0	5.0	40.2	34.9	25.1	17.1	11.8	8.5	6.3	4.8	3.8
3.0	6.0	49.6	43.1	31.0	21.1	14.6	10.4	7.7	5.9	4.7
3.0	7.0	59.1	51.4	37.0	25.2	17.4	12.4	9.2	7.1	5.6
3.0	8.0	68.8	59.8	43.0	29.3	20.2	14.5	10.7	8.2	6.5
3.0	10.0	88.3	76.8	55.2	37.6	26.0	18.6	13.8	10.6	8.3
3.0	12.0	108.0	93.9	67.5	45.9	31.8	22.7	16.9	12.9	10.2
3.0	16.0	147.7	128.4	92.3	62.8	43.4	31.1	23.1	17.7	13.9
3.0	20.0	187.6	163.1	117.3	79.8	55.2	39.5	29.3	22.5	17.7
3.5	3.0	26.4	23.0	16.5	11.3	7.8	5.6	4.1	3.2	2.5
3.5	3.5	31.9	27.7	19.9	13.6	9.4	6.7	5.0	3.8	3.0
3.5	4.0	37.4	32.5	23.4	15.9	11.0	7.9	5.8	4.5	3.5
3.5	4.5	43.1	37.5	26.9	18.3	12.7	9.1	6.7	5.2	4.1
3.5	5.0	48.8	42.5	30.5	20.8	14.4	10.3	7.6	5.8	4.6
3.5	6.0	60.5	52.6	37.8	25.8	17.8	12.7	9.5	7.3	5.7
3.5	7.0	72.5	63.0	45.3	30.8	21.3	15.3	11.3	8.7	6.8
3.5	8.0	84.6	73.5	52.9	36.0	24.9	17.8	13.2	10.1	8.0
3.5	10.0	109.1	94.9	68.2	46.4	32.1	23.0	17.0	13.1	10.3
3.5	12.0	133.9	116.5	83.7	57.0	39.4	28.2	20.9	16.0	12.6
3.5	16.0	184.1	160.1	115.1	78.3	54.2	38.8	28.8	22.1	17.4
3.5	20.0	234.7	204.1	146.7	99.9	69.0	49.4	36.7	28.1	22.1
4.0	3.0	31.0	26.9	19.3	13.2	9.1	6.5	4.8	3.7	2.9
4.0	3.5	37.4	32.5	23.4	15.9	11.0	7.9	5.8	4.5	3.5
4.0	4.0	44.1	38.3	27.5	18.8	13.0	9.3	6.9	5.3	4.2
4.0	4.5	50.9	44.2	31.8	21.6	15.0	10.7	7.9	6.1	4.8
4.0	5.0	57.8	50.3	36.1	24.6	17.0	12.2	9.0	6.9	5.5
4.0	6.0	72.0	62.6	45.0	30.6	21.2	15.2	11.2	8.6	6.8
4.0	7.0	86.5	75.2	54.0	36.8	25.4	18.2	13.5	10.4	8.2
4.0	8.0	101.2	88.0	63.2	43.1	29.8	21.3	15.8	12.1	9.5
4.0	10.0	131.2	114.0	82.0	55.8	38.6	27.6	20.5	15.7	12.4
4.0	12.0	161.6	140.5	101.0	68.8	47.5	34.0	25.2	19.4	15.2
4.0	16.0	223.3	194.2	139.6	95.0	65.7	47.0	34.9	26.7	21.1
4.0	20.0	285.6	248.4	178.5	121.5	84.0	60.1	44.6	34.2	26.9

w_1 and b_1 are non-rotation contact area dimensions, see Figure 7

PLAIN **MASTICORD™**
MAXIMUM LOAD V_{ar} (kips)

MASTICORD™ Thickness (t) = 3/8 inch (K_t = 1500)

Dimensions (inches)		Angle (A) radians								
Width w_1	Length b_1	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08
4.5	3.0	35.5	30.9	22.2	15.1	10.5	7.5	5.6	4.3	3.4
4.5	3.5	43.1	37.5	26.9	18.3	12.7	9.1	6.7	5.2	4.1
4.5	4.0	50.9	44.2	31.8	21.6	15.0	10.7	7.9	6.1	4.8
4.5	4.5	58.9	51.2	36.8	25.1	17.3	12.4	9.2	7.1	5.6
4.5	5.0	67.0	58.3	41.9	28.5	19.7	14.1	10.5	8.0	6.3
4.5	6.0	83.8	72.9	52.4	35.7	24.6	17.6	13.1	10.0	7.9
4.5	7.0	101.0	87.8	63.1	43.0	29.7	21.3	15.8	12.1	9.5
4.5	8.0	118.5	103.1	74.1	50.4	34.9	25.0	18.5	14.2	11.2
4.5	10.0	154.3	134.2	96.5	65.7	45.4	32.5	24.1	18.5	14.1
4.5	12.0	190.8	165.9	119.2	81.2	56.1	40.2	29.8	22.9	16.9
4.5	16.0	264.9	230.4	165.6	112.7	77.9	55.8	41.4	31.7	22.6
4.5	20.0	340.1	295.7	212.5	144.7	100.0	71.6	53.1	40.7	28.2
5.0	3.0	40.2	34.9	25.1	17.1	11.8	8.5	6.3	4.8	3.8
5.0	3.5	48.8	42.5	30.5	20.8	14.4	10.3	7.6	5.8	4.6
5.0	4.0	57.8	50.3	36.1	24.6	17.0	12.2	9.0	6.9	5.5
5.0	4.5	67.0	58.3	41.9	28.5	19.7	14.1	10.5	8.0	6.3
5.0	5.0	76.5	66.5	47.8	32.6	22.5	16.1	12.0	9.2	7.1
5.0	6.0	96.0	83.5	60.0	40.8	28.2	20.2	15.0	11.5	8.5
5.0	7.0	116.0	100.9	72.5	49.4	34.1	24.4	18.1	13.9	9.9
5.0	8.0	136.5	118.7	85.3	58.1	40.2	28.7	21.3	16.4	11.3
5.0	10.0	178.5	155.2	111.6	76.0	52.5	37.6	27.9	20.5	14.1
5.0	12.0	221.4	192.5	138.4	94.2	65.1	46.6	34.6	24.6	16.9
5.0	16.0	308.9	268.6	193.1	131.5	90.9	65.0	48.3	32.8	22.6
5.0	20.0	397.8	346.0	248.7	169.3	117.0	83.8	62.2	41.0	28.2
6.0	3.0	49.6	43.1	31.0	21.1	14.6	10.4	7.7	5.9	4.2
6.0	3.5	60.5	52.6	37.8	25.8	17.8	12.7	9.5	7.2	4.9
6.0	4.0	72.0	62.6	45.0	30.6	21.2	15.2	11.2	8.2	5.6
6.0	4.5	83.8	72.9	52.4	35.7	24.6	17.6	13.1	9.2	6.4
6.0	5.0	96.0	83.5	60.0	40.8	28.2	20.2	15.0	10.2	7.1
6.0	6.0	121.2	105.4	75.7	51.6	35.6	25.5	18.7	12.3	8.5
6.0	7.0	147.3	128.1	92.1	62.7	43.3	31.0	21.8	14.3	9.9
6.0	8.0	174.2	151.5	108.9	74.1	51.2	36.7	25.0	16.4	11.3
6.0	10.0	229.5	199.6	143.5	97.7	67.5	48.3	31.2	20.5	14.1
6.0	12.0	286.4	249.1	179.0	121.9	84.2	60.3	37.5	24.6	16.9
6.0	16.0	403.3	350.7	252.1	171.6	118.6	80.8	49.9	32.8	22.6
6.0	20.0	522.6	454.4	326.6	222.4	153.7	101.0	62.4	41.0	28.2

w_1 and b_1 are non-rotation contact area dimensions, see Figure 7

PLAIN **MASTICORD™**
MAXIMUM LOAD V_{ar} (kips)

MASTICORD™ Thickness (t) = 3/8 inch (K_t = 1500)

Dimensions (inches)		Angle (A) radians								
Width w_1	Length b_1	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08
8.0	3.0	68.8	59.8	43.0	29.3	20.2	14.5	9.4	6.1	4.2
8.0	3.5	84.6	73.5	52.9	36.0	24.9	17.7	10.9	7.2	4.9
8.0	4.0	101.2	88.0	63.2	43.1	29.8	20.2	12.5	8.2	5.6
8.0	4.5	118.5	103.1	74.1	50.4	34.9	22.7	14.0	9.2	6.4
8.0	5.0	136.5	118.7	85.3	58.1	40.2	25.2	15.6	10.2	7.1
8.0	6.0	174.2	151.5	108.9	74.1	51.2	30.3	18.7	12.3	8.5
8.0	7.0	213.7	185.8	133.5	90.9	61.7	35.3	21.8	14.3	9.9
8.0	8.0	254.6	221.4	159.1	108.3	70.6	40.4	25.0	16.4	11.3
8.0	10.0	340.0	295.7	212.5	144.7	88.2	50.5	31.2	20.5	14.1
8.0	12.0	428.9	373.0	268.1	182.5	105.8	60.6	37.5	24.6	16.9
8.0	16.0	613.7	533.7	383.6	261.1	141.1	80.8	49.9	32.8	22.6
8.0	20.0	804.4	699.5	502.8	340.3	176.4	101.0	62.4	41.0	28.2
10.0	3.0	88.3	76.8	55.2	37.6	26.0	15.1	9.4	6.1	4.2
10.0	3.5	109.1	94.9	68.2	46.4	30.9	17.7	10.9	7.2	4.9
10.0	4.0	131.2	114.0	82.0	55.8	35.3	20.2	12.5	8.2	5.6
10.0	4.5	154.3	134.2	96.5	65.7	39.7	22.7	14.0	9.2	6.4
10.0	5.0	178.5	155.2	111.6	76.0	44.1	25.2	15.6	10.2	7.1
10.0	6.0	229.5	199.6	143.5	97.7	52.9	30.3	18.7	12.3	8.5
10.0	7.0	283.5	246.5	177.2	119.1	61.7	35.3	21.8	14.3	9.9
10.0	8.0	340.0	295.7	212.5	136.1	70.6	40.4	25.0	16.4	11.3
10.0	10.0	459.0	399.2	286.9	170.2	88.2	50.5	31.2	20.5	14.1
10.0	12.0	584.2	508.0	365.2	204.2	105.8	60.6	37.5	24.6	16.9
10.0	16.0	847.5	736.9	529.7	272.3	141.1	80.8	49.9	32.8	22.6
10.0	20.0	1122.1	975.8	701.3	340.3	176.4	101.0	62.4	41.0	28.2
12.0	3.0	108.0	93.9	67.5	45.9	26.5	15.1	9.4	6.1	4.2
12.0	3.5	133.9	116.5	83.7	57.0	30.9	17.7	10.9	7.2	4.9
12.0	4.0	161.6	140.5	101.0	68.1	35.3	20.2	12.5	8.2	5.6
12.0	4.5	190.8	165.9	119.2	76.6	39.7	22.7	14.0	9.2	6.4
12.0	5.0	221.4	192.5	138.4	85.1	44.1	25.2	15.6	10.2	7.1
12.0	6.0	286.4	249.1	179.0	102.1	52.9	30.3	18.7	12.3	8.5
12.0	7.0	355.8	309.4	222.4	119.1	61.7	35.3	21.8	14.3	9.9
12.0	8.0	428.9	373.0	268.1	136.1	70.6	40.4	25.0	16.4	11.3
12.0	10.0	584.2	508.0	365.2	170.2	88.2	50.5	31.2	20.5	14.1
12.0	12.0	749.2	651.5	449.9	204.2	105.8	60.6	37.5	24.6	16.9
12.0	16.0	1099.6	956.2	599.9	272.3	141.1	80.8	49.9	32.8	22.6
12.0	20.0	1469.0	1277.4	749.9	340.3	176.4	101.0	62.4	41.0	28.2

w_1 and b_1 are non-rotation contact area dimensions, see Figure 7

PLAIN **MASTICORD™**
MAXIMUM LOAD V_{ar} (kips)

MASTICORD™ Thickness (t) = 1/2 inch (K_t = 500)

Dimensions (inches)		Angle (A) radians								
Width w_1	Length b_1	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08
3.0	3.0	20.0	19.0	16.6	13.8	11.1	8.9	7.1	5.8	4.8
3.0	3.5	23.9	22.7	19.9	16.5	13.3	10.6	8.5	6.9	5.7
3.0	4.0	27.8	26.5	23.2	19.2	15.4	12.4	9.9	8.1	6.6
3.0	4.5	31.8	30.3	26.5	21.9	17.7	14.1	11.4	9.2	7.6
3.0	5.0	35.9	34.2	29.9	24.7	19.9	15.9	12.8	10.4	8.5
3.0	6.0	44.1	42.0	36.7	30.4	24.5	19.6	15.7	12.8	10.5
3.0	7.0	52.4	49.9	43.6	36.1	29.1	23.3	18.7	15.2	12.5
3.0	8.0	60.8	57.9	50.6	41.9	33.8	27.0	21.7	17.6	14.5
3.0	10.0	77.7	74.0	64.7	53.6	43.2	34.5	27.7	22.5	18.5
3.0	12.0	94.7	90.2	79.0	65.3	52.6	42.1	33.8	27.5	22.6
3.0	16.0	129.1	123.0	107.6	89.0	71.7	57.4	46.1	37.4	30.7
3.0	20.0	163.7	155.9	136.4	112.9	90.9	72.7	58.5	47.4	39.0
3.5	3.0	23.9	22.7	19.9	16.5	13.3	10.6	8.5	6.9	5.7
3.5	3.5	28.6	27.2	23.8	19.7	15.9	12.7	10.2	8.3	6.8
3.5	4.0	33.4	31.8	27.8	23.0	18.6	14.9	11.9	9.7	8.0
3.5	4.5	38.3	36.5	31.9	26.4	21.3	17.0	13.7	11.1	9.1
3.5	5.0	43.3	41.3	36.1	29.9	24.1	19.3	15.5	12.6	10.3
3.5	6.0	53.4	50.9	44.5	36.9	29.7	23.8	19.1	15.5	12.7
3.5	7.0	63.7	60.7	53.1	44.0	35.4	28.3	22.8	18.5	15.2
3.5	8.0	74.1	70.6	61.8	51.1	41.2	33.0	26.5	21.5	17.7
3.5	10.0	95.2	90.7	79.3	65.7	52.9	42.3	34.0	27.6	22.7
3.5	12.0	116.5	111.0	97.1	80.4	64.7	51.8	41.6	33.8	27.7
3.5	16.0	159.5	151.9	132.9	110.0	88.6	70.9	57.0	46.2	38.0
3.5	20.0	202.8	193.2	169.0	139.9	112.7	90.1	72.4	58.8	48.3
4.0	3.0	27.8	26.5	23.2	19.2	15.4	12.4	9.9	8.1	6.6
4.0	3.5	33.4	31.8	27.8	23.0	18.6	14.9	11.9	9.7	8.0
4.0	4.0	39.2	37.3	32.6	27.0	21.8	17.4	14.0	11.4	9.3
4.0	4.5	45.0	42.9	37.5	31.1	25.0	20.0	16.1	13.1	10.7
4.0	5.0	51.0	48.6	42.5	35.2	28.3	22.7	18.2	14.8	12.1
4.0	6.0	63.2	60.2	52.6	43.6	35.1	28.1	22.6	18.3	15.0
4.0	7.0	75.6	72.0	63.0	52.1	42.0	33.6	27.0	21.9	18.0
4.0	8.0	88.1	83.9	73.4	60.8	49.0	39.2	31.5	25.5	21.0
4.0	10.0	113.7	108.3	94.7	78.4	63.1	50.5	40.6	32.9	27.1
4.0	12.0	139.6	132.9	116.3	96.2	77.5	62.0	49.8	40.4	33.2
4.0	16.0	191.9	182.8	160.0	132.4	106.6	85.3	68.6	55.6	45.7
4.0	20.0	244.8	233.2	204.0	168.8	136.0	108.8	87.4	71.0	58.3

w_1 and b_1 are non-rotation contact area dimensions, see Figure 7

PLAIN **MASTICORD™**
MAXIMUM LOAD V_{ar} (kips)

MASTICORD™ Thickness (t) = 1/2 inch (K_t = 500)

Dimensions (inches)		Angle (A) radians								
Width w_1	Length b_1	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08
4.5	3.0	31.8	30.3	26.5	21.9	17.7	14.1	11.4	9.2	7.6
4.5	3.5	38.3	36.5	31.9	26.4	21.3	17.0	13.7	11.1	9.1
4.5	4.0	45.0	42.9	37.5	31.1	25.0	20.0	16.1	13.1	10.7
4.5	4.5	51.9	49.4	43.3	35.8	28.8	23.1	18.5	15.0	12.4
4.5	5.0	58.9	56.1	49.1	40.6	32.7	26.2	21.0	17.1	14.0
4.5	6.0	73.2	69.7	61.0	50.5	40.7	32.5	26.1	21.2	17.4
4.5	7.0	87.8	83.6	73.2	60.6	48.8	39.0	31.4	25.5	20.9
4.5	8.0	102.7	97.8	85.6	70.8	57.0	45.6	36.7	29.8	24.4
4.5	10.0	133.0	126.6	110.8	91.7	73.9	59.1	47.5	38.5	31.7
4.5	12.0	163.8	156.0	136.5	112.9	91.0	72.8	58.5	47.5	39.0
4.5	16.0	226.3	215.5	188.5	156.0	125.7	100.6	80.8	65.6	53.9
4.5	20.0	289.5	275.7	241.2	199.6	160.8	128.7	103.4	83.9	68.9
5.0	3.0	35.9	34.2	29.9	24.7	19.9	15.9	12.8	10.4	8.5
5.0	3.5	43.3	41.3	36.1	29.9	24.1	19.3	15.5	12.6	10.3
5.0	4.0	51.0	48.6	42.5	35.2	28.3	22.7	18.2	14.8	12.1
5.0	4.5	58.9	56.1	49.1	40.6	32.7	26.2	21.0	17.1	14.0
5.0	5.0	66.9	63.8	55.8	46.2	37.2	29.8	23.9	19.4	15.9
5.0	6.0	83.5	79.5	69.6	57.6	46.4	37.1	29.8	24.2	19.9
5.0	7.0	100.4	95.6	83.7	69.3	55.8	44.6	35.9	29.1	23.9
5.0	8.0	117.7	112.1	98.1	81.2	65.4	52.3	42.0	34.1	28.0
5.0	10.0	153.0	145.7	127.5	105.5	85.0	68.0	54.6	44.4	36.4
5.0	12.0	189.0	180.0	157.5	130.4	105.0	84.0	67.5	54.8	45.0
5.0	16.0	262.3	249.8	218.6	180.9	145.7	116.6	93.7	76.0	62.5
5.0	20.0	336.6	320.6	280.5	232.2	187.0	149.6	120.2	97.6	80.2
6.0	3.0	44.1	42.0	36.7	30.4	24.5	19.6	15.7	12.8	10.5
6.0	3.5	53.4	50.9	44.5	36.9	29.7	23.8	19.1	15.5	12.7
6.0	4.0	63.2	60.2	52.6	43.6	35.1	28.1	22.6	18.3	15.0
6.0	4.5	73.2	69.7	61.0	50.5	40.7	32.5	26.1	21.2	17.4
6.0	5.0	83.5	79.5	69.6	57.6	46.4	37.1	29.8	24.2	19.9
6.0	6.0	104.7	99.7	87.2	72.2	58.1	46.5	37.4	30.3	24.9
6.0	7.0	126.6	120.5	105.5	87.3	70.3	56.2	45.2	36.7	30.1
6.0	8.0	149.0	141.9	124.2	102.8	82.8	66.2	53.2	43.2	35.5
6.0	10.0	195.1	185.8	162.6	134.5	108.4	86.7	69.7	56.5	46.5
6.0	12.0	242.4	230.8	202.0	167.2	134.7	107.7	86.6	70.3	57.0
6.0	16.0	339.2	323.0	282.7	233.9	188.4	150.8	121.1	98.3	76.0
6.0	20.0	437.9	417.0	364.9	302.0	243.3	194.6	156.4	126.9	95.0

w_1 and b_1 are non-rotation contact area dimensions, see Figure 7

PLAIN **MASTICORD™**
MAXIMUM LOAD V_{ar} (kips)

MASTICORD™ Thickness (t) = 5/8 inch (K_t = 400)

Dimensions (inches)		Angle (A) radians								
Width w_1	Length b_1	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08
4.5	3.0	29.6	28.4	25.5	21.8	18.0	14.8	12.1	10.0	8.3
4.5	3.5	35.5	34.1	30.6	26.1	21.6	17.7	14.5	12.0	10.0
4.5	4.0	41.5	39.9	35.8	30.5	25.3	20.8	17.0	14.0	11.7
4.5	4.5	47.7	45.9	41.1	35.1	29.1	23.9	19.6	16.1	13.4
4.5	5.0	54.0	51.9	46.6	39.7	32.9	27.0	22.1	18.2	15.2
4.5	6.0	66.8	64.2	57.6	49.1	40.7	33.4	27.4	22.6	18.8
4.5	7.0	79.9	76.8	68.9	58.7	48.7	39.9	32.7	27.0	22.4
4.5	8.0	93.2	89.6	80.3	68.5	56.8	46.6	38.2	31.5	26.2
4.5	10.0	120.1	115.5	103.6	88.3	73.3	60.1	49.2	40.6	33.7
4.5	12.0	147.5	141.9	127.2	108.5	90.0	73.8	60.5	49.8	41.4
4.5	16.0	203.0	195.2	175.0	149.3	123.8	101.5	83.2	68.6	57.0
4.5	20.0	259.1	249.2	223.4	190.5	158.0	129.6	106.2	87.5	72.8
5.0	3.0	33.3	32.0	28.7	24.5	20.3	16.6	13.6	11.2	9.3
5.0	3.5	40.0	38.5	34.5	29.4	24.4	20.0	16.4	13.5	11.2
5.0	4.0	46.9	45.1	40.5	34.5	28.6	23.5	19.2	15.9	13.2
5.0	4.5	54.0	51.9	46.6	39.7	32.9	27.0	22.1	18.2	15.2
5.0	5.0	61.2	58.9	52.8	45.0	37.3	30.6	25.1	20.7	17.2
5.0	6.0	76.0	73.0	65.5	55.8	46.3	38.0	31.1	25.7	21.3
5.0	7.0	91.0	87.5	78.5	66.9	55.5	45.5	37.3	30.8	25.6
5.0	8.0	106.4	102.3	91.7	78.2	64.9	53.2	43.6	35.9	29.9
5.0	10.0	137.7	132.4	118.7	101.3	84.0	68.9	56.4	46.5	38.7
5.0	12.0	169.6	163.1	146.2	124.7	103.4	84.8	69.5	57.3	47.6
5.0	16.0	234.3	225.3	202.0	172.3	142.9	117.2	96.0	79.2	65.8
5.0	20.0	299.9	288.4	258.5	220.5	182.9	150.0	122.9	101.3	84.2
6.0	3.0	40.8	39.2	35.1	30.0	24.9	20.4	16.7	13.8	11.5
6.0	3.5	49.2	47.3	42.4	36.2	30.0	24.6	20.2	16.6	13.8
6.0	4.0	57.9	55.7	49.9	42.6	35.3	28.9	23.7	19.6	16.3
6.0	4.5	66.8	64.2	57.6	49.1	40.7	33.4	27.4	22.6	18.8
6.0	5.0	76.0	73.0	65.5	55.8	46.3	38.0	31.1	25.7	21.3
6.0	6.0	94.7	91.1	81.7	69.7	57.8	47.4	38.8	32.0	26.6
6.0	7.0	114.1	109.7	98.4	83.9	69.6	57.0	46.8	38.5	32.1
6.0	8.0	133.9	128.7	115.4	98.4	81.6	66.9	54.9	45.2	37.6
6.0	10.0	174.4	167.7	150.4	128.3	106.4	87.2	71.5	58.9	49.0
6.0	12.0	215.9	207.6	186.2	158.8	131.7	108.0	88.5	73.0	60.7
6.0	16.0	300.7	289.2	259.3	221.1	183.4	150.4	123.3	101.6	84.5
6.0	20.0	387.0	372.1	333.6	284.6	236.0	193.5	158.6	130.7	108.7

w_1 and b_1 are non-rotation contact area dimensions, see Figure 7

PLAIN **MASTICORD™**
MAXIMUM LOAD V_{ar} (kips)

MASTICORD™ Thickness (t) = 5/8 inch (K_t = 400)

Dimensions (inches)		Angle (A) radians								
Width w_1	Length b_1	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08
3.0	3.0	18.7	18.0	16.1	13.8	11.4	9.4	7.7	6.3	5.3
3.0	3.5	22.3	21.4	19.2	16.4	13.6	11.1	9.1	7.5	6.3
3.0	4.0	25.9	24.9	22.3	19.1	15.8	13.0	10.6	8.8	7.3
3.0	4.5	29.6	28.4	25.5	21.8	18.0	14.8	12.1	10.0	8.3
3.0	5.0	33.3	32.0	28.7	24.5	20.3	16.6	13.6	11.2	9.3
3.0	6.0	40.8	39.2	35.1	30.0	24.9	20.4	16.7	13.8	11.5
3.0	7.0	48.3	46.5	41.7	35.5	29.5	24.2	19.8	16.3	13.6
3.0	8.0	56.0	53.8	48.2	41.1	34.1	28.0	22.9	18.9	15.7
3.0	10.0	71.3	68.6	61.5	52.4	43.5	35.7	29.2	24.1	20.0
3.0	12.0	86.8	83.5	74.8	63.8	52.9	43.4	35.6	29.3	24.4
3.0	16.0	118.0	113.4	101.7	86.8	71.9	59.0	48.4	39.9	33.1
3.0	20.0	149.3	143.5	128.7	109.8	91.0	74.6	61.2	50.4	41.9
3.5	3.0	22.3	21.4	19.2	16.4	13.6	11.1	9.1	7.5	6.3
3.5	3.5	26.6	25.6	22.9	19.6	16.2	13.3	10.9	9.0	7.5
3.5	4.0	31.0	29.8	26.7	22.8	18.9	15.5	12.7	10.5	8.7
3.5	4.5	35.5	34.1	30.6	26.1	21.6	17.7	14.5	12.0	10.0
3.5	5.0	40.0	38.5	34.5	29.4	24.4	20.0	16.4	13.5	11.2
3.5	6.0	49.2	47.3	42.4	36.2	30.0	24.6	20.2	16.6	13.8
3.5	7.0	58.5	56.2	50.4	43.0	35.7	29.2	24.0	19.8	16.4
3.5	8.0	67.9	65.3	58.5	49.9	41.4	33.9	27.8	22.9	19.1
3.5	10.0	86.9	83.5	74.9	63.9	53.0	43.4	35.6	29.4	24.4
3.5	12.0	106.1	102.0	91.4	78.0	64.7	53.0	43.5	35.8	29.8
3.5	16.0	144.7	139.2	124.8	106.4	88.3	72.4	59.3	48.9	40.7
3.5	20.0	183.7	176.6	158.3	135.1	112.0	91.8	75.3	62.1	51.6
4.0	3.0	25.9	24.9	22.3	19.1	15.8	13.0	10.6	8.8	7.3
4.0	3.5	31.0	29.8	26.7	22.8	18.9	15.5	12.7	10.5	8.7
4.0	4.0	36.2	34.8	31.2	26.6	22.1	18.1	14.9	12.2	10.2
4.0	4.5	41.5	39.9	35.8	30.5	25.3	20.8	17.0	14.0	11.7
4.0	5.0	46.9	45.1	40.5	34.5	28.6	23.5	19.2	15.9	13.2
4.0	6.0	57.9	55.7	49.9	42.6	35.3	28.9	23.7	19.6	16.3
4.0	7.0	69.0	66.4	59.5	50.7	42.1	34.5	28.3	23.3	19.4
4.0	8.0	80.3	77.2	69.2	59.0	49.0	40.2	32.9	27.1	22.6
4.0	10.0	103.2	99.2	88.9	75.9	62.9	51.6	42.3	34.9	29.0
4.0	12.0	126.3	121.5	108.9	92.9	77.0	63.2	51.8	42.7	35.5
4.0	16.0	173.1	166.5	149.3	127.3	105.6	86.6	71.0	58.5	48.6
4.0	20.0	220.3	211.9	190.0	162.0	134.4	110.2	90.3	74.4	61.9

w_1 and b_1 are non-rotation contact area dimensions, see Figure 7

PLAIN **MASTICORD™**
MAXIMUM LOAD V_{ar} (kips)

MASTICORD™ Thickness (t) = 5/8 inch (K_t = 400)

Dimensions (inches)		Angle (A) radians								
Width w_1	Length b_1	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08
4.5	3.0	29.6	28.4	25.5	21.8	18.0	14.8	12.1	10.0	8.3
4.5	3.5	35.5	34.1	30.6	26.1	21.6	17.7	14.5	12.0	10.0
4.5	4.0	41.5	39.9	35.8	30.5	25.3	20.8	17.0	14.0	11.7
4.5	4.5	47.7	45.9	41.1	35.1	29.1	23.9	19.6	16.1	13.4
4.5	5.0	54.0	51.9	46.6	39.7	32.9	27.0	22.1	18.2	15.2
4.5	6.0	66.8	64.2	57.6	49.1	40.7	33.4	27.4	22.6	18.8
4.5	7.0	79.9	76.8	68.9	58.7	48.7	39.9	32.7	27.0	22.4
4.5	8.0	93.2	89.6	80.3	68.5	56.8	46.6	38.2	31.5	26.2
4.5	10.0	120.1	115.5	103.6	88.3	73.3	60.1	49.2	40.6	33.7
4.5	12.0	147.5	141.9	127.2	108.5	90.0	73.8	60.5	49.8	41.4
4.5	16.0	203.0	195.2	175.0	149.3	123.8	101.5	83.2	68.6	57.0
4.5	20.0	259.1	249.2	223.4	190.5	158.0	129.6	106.2	87.5	72.8
5.0	3.0	33.3	32.0	28.7	24.5	20.3	16.6	13.6	11.2	9.3
5.0	3.5	40.0	38.5	34.5	29.4	24.4	20.0	16.4	13.5	11.2
5.0	4.0	46.9	45.1	40.5	34.5	28.6	23.5	19.2	15.9	13.2
5.0	4.5	54.0	51.9	46.6	39.7	32.9	27.0	22.1	18.2	15.2
5.0	5.0	61.2	58.9	52.8	45.0	37.3	30.6	25.1	20.7	17.2
5.0	6.0	76.0	73.0	65.5	55.8	46.3	38.0	31.1	25.7	21.3
5.0	7.0	91.0	87.5	78.5	66.9	55.5	45.5	37.3	30.8	25.6
5.0	8.0	106.4	102.3	91.7	78.2	64.9	53.2	43.6	35.9	29.9
5.0	10.0	137.7	132.4	118.7	101.3	84.0	68.9	56.4	46.5	38.7
5.0	12.0	169.6	163.1	146.2	124.7	103.4	84.8	69.5	57.3	47.6
5.0	16.0	234.3	225.3	202.0	172.3	142.9	117.2	96.0	79.2	65.8
5.0	20.0	299.9	288.4	258.5	220.5	182.9	150.0	122.9	101.3	84.2
6.0	3.0	40.8	39.2	35.1	30.0	24.9	20.4	16.7	13.8	11.5
6.0	3.5	49.2	47.3	42.4	36.2	30.0	24.6	20.2	16.6	13.8
6.0	4.0	57.9	55.7	49.9	42.6	35.3	28.9	23.7	19.6	16.3
6.0	4.5	66.8	64.2	57.6	49.1	40.7	33.4	27.4	22.6	18.8
6.0	5.0	76.0	73.0	65.5	55.8	46.3	38.0	31.1	25.7	21.3
6.0	6.0	94.7	91.1	81.7	69.7	57.8	47.4	38.8	32.0	26.6
6.0	7.0	114.1	109.7	98.4	83.9	69.6	57.0	46.8	38.5	32.1
6.0	8.0	133.9	128.7	115.4	98.4	81.6	66.9	54.9	45.2	37.6
6.0	10.0	174.4	167.7	150.4	128.3	106.4	87.2	71.5	58.9	49.0
6.0	12.0	215.9	207.6	186.2	158.8	131.7	108.0	88.5	73.0	60.7
6.0	16.0	300.7	289.2	259.3	221.1	183.4	150.4	123.3	101.6	84.5
6.0	20.0	387.0	372.1	333.6	284.6	236.0	193.5	158.6	130.7	108.7

w_1 and b_1 are non-rotation contact area dimensions, see Figure 7

PLAIN **MASTICORD™**
MAXIMUM LOAD V_{ar} (kips)

MASTICORD™ Thickness (t) = 5/8 inch (K_t = 400)

Dimensions (inches)		Angle (A) radians								
Width w_1	Length b_1	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08
8.0	3.0	56.0	53.8	48.2	41.1	34.1	28.0	22.9	18.9	15.7
8.0	3.5	67.9	65.3	58.5	49.9	41.4	33.9	27.8	22.9	19.1
8.0	4.0	80.3	77.2	69.2	59.0	49.0	40.2	32.9	27.1	22.6
8.0	4.5	93.2	89.6	80.3	68.5	56.8	46.6	38.2	31.5	26.2
8.0	5.0	106.4	102.3	91.7	78.2	64.9	53.2	43.6	35.9	29.9
8.0	6.0	133.9	128.7	115.4	98.4	81.6	66.9	54.9	45.2	37.6
8.0	7.0	162.5	156.2	140.1	119.5	99.1	81.2	66.6	54.9	45.6
8.0	8.0	191.9	184.6	165.5	141.1	117.0	96.0	78.7	64.8	53.9
8.0	10.0	253.0	243.3	218.1	186.0	154.3	126.5	103.7	85.5	70.1
8.0	12.0	316.1	304.0	272.5	232.4	192.8	158.1	129.6	106.8	84.1
8.0	16.0	446.6	429.4	385.0	328.4	272.3	223.3	183.0	150.9	112.1
8.0	20.0	580.6	558.3	500.5	426.9	354.0	290.3	237.9	192.7	140.1
10.0	3.0	71.3	68.6	61.5	52.4	43.5	35.7	29.2	24.1	20.0
10.0	3.5	86.9	83.5	74.9	63.9	53.0	43.4	35.6	29.4	24.4
10.0	4.0	103.2	99.2	88.9	75.9	62.9	51.6	42.3	34.9	28.0
10.0	4.5	120.1	115.5	103.6	88.3	73.3	60.1	49.2	40.6	31.5
10.0	5.0	137.7	132.4	118.7	101.3	84.0	68.9	56.4	46.5	35.0
10.0	6.0	174.4	167.7	150.4	128.3	106.4	87.2	71.5	57.8	42.0
10.0	7.0	213.0	204.8	183.6	156.6	129.9	106.5	87.3	67.5	49.1
10.0	8.0	253.0	243.3	218.1	186.0	154.3	126.5	103.7	77.1	56.1
10.0	10.0	336.6	323.7	290.2	247.5	205.3	168.3	136.4	96.4	70.1
10.0	12.0	424.0	407.7	365.5	311.8	258.5	212.0	163.7	115.6	84.1
10.0	16.0	606.4	583.1	522.8	445.9	369.8	303.2	218.3	154.2	112.1
10.0	20.0	795.7	765.1	685.9	585.1	485.2	397.8	272.9	192.7	140.1
12.0	3.0	86.8	83.5	74.8	63.8	52.9	43.4	35.6	28.9	21.0
12.0	3.5	106.1	102.0	91.4	78.0	64.7	53.0	43.5	33.7	24.5
12.0	4.0	126.3	121.5	108.9	92.9	77.0	63.2	51.8	38.5	28.0
12.0	4.5	147.5	141.9	127.2	108.5	90.0	73.8	60.5	43.4	31.5
12.0	5.0	169.6	163.1	146.2	124.7	103.4	84.8	68.2	48.2	35.0
12.0	6.0	215.9	207.6	186.2	158.8	131.7	108.0	81.9	57.8	42.0
12.0	7.0	264.9	254.7	228.4	194.8	161.5	132.5	95.5	67.5	49.1
12.0	8.0	316.1	304.0	272.5	232.4	192.8	158.1	109.2	77.1	56.1
12.0	10.0	424.0	407.7	365.5	311.8	258.5	199.8	136.4	96.4	70.1
12.0	12.0	537.6	517.0	463.5	395.3	327.8	239.8	163.7	115.6	84.1
12.0	16.0	777.3	747.4	670.1	571.5	474.0	319.7	218.3	154.2	112.1
12.0	20.0	1028.3	988.7	886.4	756.1	609.4	399.7	272.9	192.7	140.1

w_1 and b_1 are non-rotation contact area dimensions, see Figure 7

PLAIN **MASTICORD™**
MAXIMUM LOAD V_{ar} (kips)

MASTICORD™ Thickness (t) = 3/4 inch (K_t = 325)

Dimensions (inches)		Angle (A) radians								
Width w_1	Length b_1	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08
3.0	3.0	17.9	17.3	15.8	13.9	11.8	9.9	8.3	6.9	5.8
3.0	3.5	21.3	20.6	18.8	16.4	14.0	11.7	9.8	8.2	6.9
3.0	4.0	24.7	23.9	21.8	19.1	16.2	13.6	11.4	9.5	8.0
3.0	4.5	28.1	27.2	24.9	21.7	18.5	15.5	12.9	10.8	9.1
3.0	5.0	31.6	30.6	27.9	24.4	20.8	17.4	14.5	12.2	10.2
3.0	6.0	38.6	37.3	34.1	29.8	25.4	21.3	17.8	14.9	12.5
3.0	7.0	45.6	44.2	40.4	35.3	30.0	25.2	21.0	17.6	14.8
3.0	8.0	52.7	51.1	46.7	40.8	34.7	29.1	24.3	20.3	17.1
3.0	10.0	67.1	65.0	59.4	51.9	44.1	37.0	30.9	25.9	21.8
3.0	12.0	81.5	79.0	72.1	63.1	53.6	45.0	37.6	31.4	26.5
3.0	16.0	110.6	107.1	97.8	85.5	72.7	61.0	50.9	42.6	35.9
3.0	20.0	139.7	135.3	123.6	108.1	91.9	77.1	64.4	53.9	45.4
3.5	3.0	21.3	20.6	18.8	16.4	14.0	11.7	9.8	8.2	6.9
3.5	3.5	25.3	24.5	22.4	19.6	16.6	14.0	11.7	9.8	8.2
3.5	4.0	29.4	28.5	26.0	22.8	19.4	16.2	13.6	11.3	9.6
3.5	4.5	33.6	32.5	29.7	26.0	22.1	18.5	15.5	13.0	10.9
3.5	5.0	37.8	36.6	33.5	29.2	24.9	20.9	17.4	14.6	12.3
3.5	6.0	46.3	44.9	41.0	35.9	30.5	25.6	21.4	17.9	15.0
3.5	7.0	55.0	53.3	48.7	42.5	36.2	30.3	25.3	21.2	17.9
3.5	8.0	63.7	61.7	56.4	49.3	41.9	35.1	29.4	24.6	20.7
3.5	10.0	81.3	78.8	72.0	62.9	53.5	44.9	37.5	31.4	26.4
3.5	12.0	99.1	96.0	87.7	76.7	65.2	54.7	45.7	38.2	32.2
3.5	16.0	134.9	130.7	119.4	104.4	88.8	74.4	62.2	52.0	43.8
3.5	20.0	170.9	165.5	151.3	132.2	112.4	94.3	78.8	65.9	55.5
4.0	3.0	24.7	23.9	21.8	19.1	16.2	13.6	11.4	9.5	8.0
4.0	3.5	29.4	28.5	26.0	22.8	19.4	16.2	13.6	11.3	9.6
4.0	4.0	34.3	33.2	30.3	26.5	22.5	18.9	15.8	13.2	11.1
4.0	4.5	39.2	38.0	34.7	30.3	25.8	21.6	18.1	15.1	12.7
4.0	5.0	44.2	42.8	39.1	34.2	29.1	24.4	20.4	17.1	14.4
4.0	6.0	54.4	52.6	48.1	42.1	35.8	30.0	25.0	21.0	17.6
4.0	7.0	64.7	62.6	57.2	50.0	42.5	35.7	29.8	24.9	21.0
4.0	8.0	75.1	72.7	66.4	58.1	49.4	41.4	34.6	29.0	24.4
4.0	10.0	96.2	93.2	85.1	74.4	63.3	53.1	44.3	37.1	31.2
4.0	12.0	117.5	113.8	104.0	90.9	77.3	64.8	54.2	45.3	38.2
4.0	16.0	160.6	155.6	142.1	124.3	105.7	88.6	74.0	62.0	52.1
4.0	20.0	204.0	197.6	180.6	157.9	134.2	112.6	94.0	78.7	66.2

w_1 and b_1 are non-rotation contact area dimensions, see Figure 7

PLAIN **MASTICORD™**
MAXIMUM LOAD V_{ar} (kips)

MASTICORD™ Thickness (t) = 3/4 inch (K_t = 325)

Dimensions (inches)		Angle (A) radians								
Width w_1	Length b_1	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08
4.5	3.0	28.1	27.2	24.9	21.7	18.5	15.5	12.9	10.8	9.1
4.5	3.5	33.6	32.5	29.7	26.0	22.1	18.5	15.5	13.0	10.9
4.5	4.0	39.2	38.0	34.7	30.3	25.8	21.6	18.1	15.1	12.7
4.5	4.5	44.9	43.5	39.8	34.8	29.6	24.8	20.7	17.3	14.6
4.5	5.0	50.7	49.1	44.9	39.3	33.4	28.0	23.4	19.6	16.5
4.5	6.0	62.6	60.6	55.4	48.4	41.2	34.5	28.8	24.1	20.3
4.5	7.0	74.6	72.3	66.0	57.7	49.1	41.2	34.4	28.8	24.2
4.5	8.0	86.8	84.1	76.8	67.2	57.1	47.9	40.0	33.5	28.2
4.5	10.0	111.6	108.1	98.8	86.3	73.4	61.6	51.4	43.0	36.2
4.5	12.0	136.7	132.4	121.0	105.8	89.9	75.4	63.0	52.7	44.4
4.5	16.0	187.6	181.7	166.0	145.1	123.4	103.5	86.4	72.3	60.9
4.5	20.0	238.9	231.4	211.4	184.8	157.2	131.8	110.1	92.1	77.6
5.0	3.0	31.6	30.6	27.9	24.4	20.8	17.4	14.5	12.2	10.2
5.0	3.5	37.8	36.6	33.5	29.2	24.9	20.9	17.4	14.6	12.3
5.0	4.0	44.2	42.8	39.1	34.2	29.1	24.4	20.4	17.1	14.4
5.0	4.5	50.7	49.1	44.9	39.3	33.4	28.0	23.4	19.6	16.5
5.0	5.0	57.4	55.6	50.8	44.4	37.8	31.7	26.4	22.1	18.6
5.0	6.0	70.9	68.7	62.8	54.9	46.7	39.1	32.7	27.4	23.0
5.0	7.0	84.8	82.1	75.0	65.6	55.8	46.8	39.1	32.7	27.5
5.0	8.0	98.9	95.8	87.5	76.5	65.0	54.6	45.6	38.1	32.1
5.0	10.0	127.5	123.5	112.8	98.7	83.9	70.4	58.8	49.2	41.4
5.0	12.0	156.6	151.7	138.6	121.2	103.0	86.4	72.2	60.4	50.8
5.0	16.0	215.7	208.9	190.9	166.9	141.9	119.0	99.4	83.2	70.0
5.0	20.0	275.4	266.8	243.7	213.1	181.2	152.0	126.9	106.2	89.4
6.0	3.0	38.6	37.3	34.1	29.8	25.4	21.3	17.8	14.9	12.5
6.0	3.5	46.3	44.9	41.0	35.9	30.5	25.6	21.4	17.9	15.0
6.0	4.0	54.4	52.6	48.1	42.1	35.8	30.0	25.0	21.0	17.6
6.0	4.5	62.6	60.6	55.4	48.4	41.2	34.5	28.8	24.1	20.3
6.0	5.0	70.9	68.7	62.8	54.9	46.7	39.1	32.7	27.4	23.0
6.0	6.0	88.1	85.4	78.0	68.2	58.0	48.6	40.6	34.0	28.6
6.0	7.0	105.8	102.5	93.6	81.9	69.6	58.4	48.8	40.8	34.3
6.0	8.0	123.8	119.9	109.6	95.8	81.5	68.3	57.1	47.8	40.2
6.0	10.0	160.7	155.6	142.2	124.3	105.7	88.6	74.0	62.0	52.2
6.0	12.0	198.3	192.1	175.5	153.4	130.5	109.4	91.4	76.5	64.4
6.0	16.0	275.1	266.4	243.4	212.8	181.0	151.8	126.8	106.1	89.3
6.0	20.0	353.1	342.0	312.5	273.2	232.3	194.8	162.7	136.2	114.6

v_1 and b_1 are non-rotation contact area dimensions, see Figure 7

PLAIN **MASTICORD™**
MAXIMUM LOAD V_{ar} (kips)

MASTICORD™ Thickness (t) = 3/4 inch (K_t = 325)

Dimensions (inches)		Angle (A) radians								
Width w_1	Length b_1	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08
8.0	3.0	52.7	51.1	46.7	40.8	34.7	29.1	24.3	20.3	17.1
8.0	3.5	63.7	61.7	56.4	49.3	41.9	35.1	29.4	24.6	20.7
8.0	4.0	75.1	72.7	66.4	58.1	49.4	41.4	34.6	29.0	24.4
8.0	4.5	86.8	84.1	76.8	67.2	57.1	47.9	40.0	33.5	28.2
8.0	5.0	98.9	95.8	87.5	76.5	65.0	54.6	45.6	38.1	32.1
8.0	6.0	123.8	119.9	109.6	95.8	81.5	68.3	57.1	47.8	40.2
8.0	7.0	149.7	145.0	132.5	115.8	98.5	82.6	69.0	57.7	48.6
8.0	8.0	176.3	170.7	156.0	136.4	116.0	97.3	81.2	68.0	57.2
8.0	10.0	231.2	223.9	204.6	178.9	152.1	127.6	106.6	89.2	75.1
8.0	12.0	287.9	278.9	254.8	222.8	189.4	158.9	132.7	111.1	93.5
8.0	16.0	404.8	392.0	358.2	313.2	266.3	223.3	186.5	156.1	131.4
8.0	20.0	524.6	508.1	464.3	405.9	345.1	289.4	241.8	202.4	170.3
10.0	3.0	67.1	65.0	59.4	51.9	44.1	37.0	30.9	25.9	21.8
10.0	3.5	81.3	78.8	72.0	62.9	53.5	44.9	37.5	31.4	26.4
10.0	4.0	96.2	93.2	85.1	74.4	63.3	53.1	44.3	37.1	31.2
10.0	4.5	111.6	108.1	98.8	86.3	73.4	61.6	51.4	43.0	36.2
10.0	5.0	127.5	123.5	112.8	98.7	83.9	70.4	58.8	49.2	41.4
10.0	6.0	160.7	155.6	142.2	124.3	105.7	88.6	74.0	62.0	52.2
10.0	7.0	195.3	189.2	172.9	151.1	128.5	107.8	90.0	75.3	63.4
10.0	8.0	231.2	223.9	204.6	178.9	152.1	127.6	106.6	89.2	75.1
10.0	10.0	306.0	296.4	270.8	236.8	201.3	168.8	141.0	118.0	97.2
10.0	12.0	383.9	371.8	339.8	297.0	252.6	211.8	176.9	148.1	116.6
10.0	16.0	546.2	529.0	483.3	422.6	359.3	301.3	251.7	210.7	155.5
10.0	20.0	714.1	691.6	631.9	552.5	469.8	394.0	329.1	264.1	194.4
12.0	3.0	81.5	79.0	72.1	63.1	53.6	45.0	37.6	31.4	26.5
12.0	3.5	99.1	96.0	87.7	76.7	65.2	54.7	45.7	38.2	32.2
12.0	4.0	117.5	113.8	104.0	90.9	77.3	64.8	54.2	45.3	38.2
12.0	4.5	136.7	132.4	121.0	105.8	89.9	75.4	63.0	52.7	43.7
12.0	5.0	156.6	151.7	138.6	121.2	103.0	86.4	72.2	60.4	48.6
12.0	6.0	198.3	192.1	175.5	153.4	130.5	109.4	91.4	76.5	58.3
12.0	7.0	242.2	234.6	214.3	187.4	159.3	133.6	111.6	92.4	68.0
12.0	8.0	287.9	278.9	254.8	222.8	189.4	158.9	132.7	105.6	77.8
12.0	10.0	383.9	371.8	339.8	297.0	252.6	211.8	176.9	132.0	97.2
12.0	12.0	484.8	469.5	429.0	375.1	318.9	267.5	220.9	158.4	116.6
12.0	16.0	696.7	674.8	616.6	539.0	458.4	384.4	294.6	211.3	155.5
12.0	20.0	918.1	889.2	812.5	710.3	604.0	506.5	368.2	264.1	194.4

w_1 and b_1 are non-rotation contact area dimensions, see Figure 7

PLAIN **MASTICORD™**
MAXIMUM LOAD V_{ar} (kips)

MASTICORD™ Thickness (t) = 1 inch (K_t = 275)

Dimensions (inches)		Angle (A) radians								
Width w_1	Length b_1	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08
3.0	3.0	16.9	16.4	15.2	13.5	11.7	10.0	8.5	7.2	6.1
3.0	3.5	20.0	19.4	18.0	16.0	13.9	11.8	10.0	8.5	7.2
3.0	4.0	23.1	22.5	20.8	18.5	16.0	13.7	11.6	9.8	8.4
3.0	4.5	26.2	25.5	23.6	21.0	18.2	15.5	13.2	11.2	9.5
3.0	5.0	29.4	28.6	26.5	23.6	20.4	17.4	14.8	12.5	10.7
3.0	6.0	35.8	34.8	32.3	28.7	24.9	21.2	18.0	15.3	13.0
3.0	7.0	42.3	41.1	38.1	33.9	29.3	25.0	21.2	18.0	15.3
3.0	8.0	48.7	47.4	43.9	39.1	33.8	28.9	24.5	20.8	17.7
3.0	10.0	61.8	60.1	55.7	49.5	42.9	36.6	31.1	26.3	22.4
3.0	12.0	74.9	72.9	67.5	60.1	52.0	44.4	37.6	31.9	27.1
3.0	16.0	101.3	98.6	91.2	81.2	70.3	60.0	50.9	43.1	36.7
3.0	20.0	127.7	124.3	115.1	102.4	88.7	75.7	64.2	54.4	46.3
3.5	3.0	20.0	19.4	18.0	16.0	13.9	11.8	10.0	8.5	7.2
3.5	3.5	23.7	23.0	21.3	19.0	16.4	14.0	11.9	10.1	8.6
3.5	4.0	27.4	26.7	24.7	22.0	19.0	16.2	13.8	11.7	9.9
3.5	4.5	31.2	30.4	28.1	25.0	21.7	18.5	15.7	13.3	11.3
3.5	5.0	35.0	34.1	31.6	28.1	24.3	20.8	17.6	14.9	12.7
3.5	6.0	42.8	41.6	38.5	34.3	29.7	25.4	21.5	18.2	15.5
3.5	7.0	50.6	49.3	45.6	40.6	35.1	30.0	25.4	21.6	18.3
3.5	8.0	58.5	56.9	52.7	46.9	40.6	34.7	29.4	24.9	21.2
3.5	10.0	74.4	72.4	67.0	59.6	51.7	44.1	37.4	31.7	27.0
3.5	12.0	90.4	88.0	81.4	72.5	62.8	53.6	45.4	38.5	32.7
3.5	16.0	122.6	119.3	110.5	98.3	85.1	72.7	61.6	52.2	44.4
3.5	20.0	155.0	150.8	139.6	124.2	107.6	91.8	77.9	66.0	56.1
4.0	3.0	23.1	22.5	20.8	18.5	16.0	13.7	11.6	9.8	8.4
4.0	3.5	27.4	26.7	24.7	22.0	19.0	16.2	13.8	11.7	9.9
4.0	4.0	31.8	31.0	28.7	25.5	22.1	18.9	16.0	13.6	11.5
4.0	4.5	36.3	35.3	32.7	29.1	25.2	21.5	18.2	15.5	13.1
4.0	5.0	40.8	39.7	36.8	32.7	28.3	24.2	20.5	17.4	14.8
4.0	6.0	49.9	48.6	45.0	40.0	34.7	29.6	25.1	21.3	18.1
4.0	7.0	59.2	57.6	53.3	47.5	41.1	35.1	29.8	25.2	21.5
4.0	8.0	68.6	66.7	61.8	55.0	47.6	40.6	34.4	29.2	24.8
4.0	10.0	87.4	85.1	78.8	70.1	60.7	51.8	43.9	37.2	31.7
4.0	12.0	106.5	103.6	95.9	85.4	74.0	63.1	53.5	45.4	38.6
4.0	16.0	144.9	141.1	130.6	116.2	100.7	85.9	72.8	61.7	52.5
4.0	20.0	183.6	178.7	165.4	147.2	127.5	108.8	92.3	78.2	66.5

w_1 and b_1 are non-rotation contact area dimensions, see Figure 7

PLAIN **MASTICORD™**
MAXIMUM LOAD V_{ar} (kips)

MASTICORD™ Thickness (t) = 1 inch (K_t = 275)

Dimensions (inches)		Angle (A) radians								
Width w_1	Length b_1	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08
4.5	3.0	26.2	25.5	23.6	21.0	18.2	15.5	13.2	11.2	9.5
4.5	3.5	31.2	30.4	28.1	25.0	21.7	18.5	15.7	13.3	11.3
4.5	4.0	36.3	35.3	32.7	29.1	25.2	21.5	18.2	15.5	13.1
4.5	4.5	41.4	40.3	37.3	33.2	28.8	24.6	20.8	17.7	15.0
4.5	5.0	46.7	45.4	42.0	37.4	32.4	27.7	23.4	19.9	16.9
4.5	6.0	57.2	55.7	51.6	45.9	39.8	33.9	28.8	24.4	20.7
4.5	7.0	68.0	66.2	61.3	54.5	47.2	40.3	34.2	29.0	24.6
4.5	8.0	78.9	76.8	71.1	63.2	54.8	46.7	39.6	33.6	28.6
4.5	10.0	100.9	98.2	90.9	80.9	70.1	59.8	50.7	43.0	36.6
4.5	12.0	123.2	119.9	111.0	98.8	85.6	73.0	61.9	52.5	44.6
4.5	16.0	168.2	163.7	151.5	134.8	116.8	99.7	84.5	71.7	60.9
4.5	20.0	213.6	207.9	192.4	171.2	148.3	126.6	107.3	91.0	77.4
5.0	3.0	29.4	28.6	26.5	23.6	20.4	17.4	14.8	12.5	10.7
5.0	3.5	35.0	34.1	31.6	28.1	24.3	20.8	17.6	14.9	12.7
5.0	4.0	40.8	39.7	36.8	32.7	28.3	24.2	20.5	17.4	14.8
5.0	4.5	46.7	45.4	42.0	37.4	32.4	27.7	23.4	19.9	16.9
5.0	5.0	52.6	51.2	47.4	42.2	36.5	31.2	26.4	22.4	19.1
5.0	6.0	64.7	63.0	58.3	51.9	44.9	38.3	32.5	27.6	23.4
5.0	7.0	77.0	74.9	69.4	61.7	53.5	45.6	38.7	32.8	27.9
5.0	8.0	89.5	87.1	80.6	71.7	62.1	53.0	45.0	38.1	32.4
5.0	10.0	114.8	111.7	103.4	92.0	79.7	68.0	57.7	48.9	41.6
5.0	12.0	140.4	136.7	126.5	112.6	97.5	83.2	70.6	59.8	50.9
5.0	16.0	192.4	187.2	173.3	154.2	133.6	114.0	96.7	81.9	69.7
5.0	20.0	244.8	238.3	220.6	196.3	170.0	145.1	123.0	104.3	88.7
6.0	3.0	35.8	34.8	32.3	28.7	24.9	21.2	18.0	15.3	13.0
6.0	3.5	42.8	41.6	38.5	34.3	29.7	25.4	21.5	18.2	15.5
6.0	4.0	49.9	48.6	45.0	40.0	34.7	29.6	25.1	21.3	18.1
6.0	4.5	57.2	55.7	51.6	45.9	39.8	33.9	28.8	24.4	20.7
6.0	5.0	64.7	63.0	58.3	51.9	44.9	38.3	32.5	27.6	23.4
6.0	6.0	79.9	77.7	72.0	64.0	55.5	47.3	40.1	34.0	28.9
6.0	7.0	95.4	92.9	86.0	76.5	66.3	56.5	47.9	40.6	34.6
6.0	8.0	111.2	108.2	100.2	89.2	77.2	65.9	55.9	47.4	40.3
6.0	10.0	143.5	139.6	129.2	115.0	99.6	85.0	72.1	61.1	52.0
6.0	12.0	176.3	171.6	158.8	141.3	122.4	104.5	88.6	75.1	63.9
6.0	16.0	243.0	236.5	219.0	194.8	168.8	144.0	122.1	103.5	88.1
6.0	20.0	310.7	302.4	279.9	249.1	215.8	184.1	156.2	132.4	112.6

w_1 and b_1 are non-rotation contact area dimensions, see Figure 7

PLAIN **MASTICORD™**
MAXIMUM LOAD V_{ar} (kips)

MASTICORD™ Thickness (t) = 1 inch (K_t = 275)

Dimensions (inches)		Angle (A) radians								
Width w_1	Length b_1	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08
8.0	3.0	48.7	47.4	43.9	39.1	33.8	28.9	24.5	20.8	17.7
8.0	3.5	58.5	56.9	52.7	46.9	40.6	34.7	29.4	24.9	21.2
8.0	4.0	68.6	66.7	61.8	55.0	47.6	40.6	34.4	29.2	24.8
8.0	4.5	78.9	76.8	71.1	63.2	54.8	46.7	39.6	33.6	28.6
8.0	5.0	89.5	87.1	80.6	71.7	62.1	53.0	45.0	38.1	32.4
8.0	6.0	111.2	108.2	100.2	89.2	77.2	65.9	55.9	47.4	40.3
8.0	7.0	133.7	130.1	120.4	107.2	92.8	79.2	67.2	56.9	48.4
8.0	8.0	156.7	152.5	141.2	125.6	108.8	92.9	78.7	66.7	56.8
8.0	10.0	204.0	198.6	183.8	163.5	141.7	120.9	102.5	86.9	73.9
8.0	12.0	252.7	245.9	227.6	202.5	175.5	149.7	127.0	107.6	91.5
8.0	16.0	352.5	343.1	317.6	282.6	244.8	208.9	177.2	150.2	127.7
8.0	20.0	454.7	442.5	409.6	364.5	315.7	269.4	228.5	193.7	164.7
10.0	3.0	61.8	60.1	55.7	49.5	42.9	36.6	31.1	26.3	22.4
10.0	3.5	74.4	72.4	67.0	59.6	51.7	44.1	37.4	31.7	27.0
10.0	4.0	87.4	85.1	78.8	70.1	60.7	51.8	43.9	37.2	31.7
10.0	4.5	100.9	98.2	90.9	80.9	70.1	59.8	50.7	43.0	36.6
10.0	5.0	114.8	111.7	103.4	92.0	79.7	68.0	57.7	48.9	41.6
10.0	6.0	143.5	139.6	129.2	115.0	99.6	85.0	72.1	61.1	52.0
10.0	7.0	173.3	168.6	156.1	138.9	120.3	102.7	87.1	73.8	62.8
10.0	8.0	204.0	198.6	183.8	163.5	141.7	120.9	102.5	86.9	73.9
10.0	10.0	267.8	260.6	241.2	214.7	186.0	158.7	134.6	114.1	97.0
10.0	12.0	333.9	324.9	300.8	267.6	231.8	197.8	167.8	142.2	121.0
10.0	16.0	470.8	458.2	424.2	377.4	327.0	279.0	236.6	200.6	170.6
10.0	20.0	612.1	595.7	551.4	490.6	425.0	362.7	307.6	260.7	221.8
12.0	3.0	74.9	72.9	67.5	60.1	52.0	44.4	37.6	31.9	27.1
12.0	3.5	90.4	88.0	81.4	72.5	62.8	53.6	45.4	38.5	32.7
12.0	4.0	106.5	103.6	95.9	85.4	74.0	63.1	53.5	45.4	38.6
12.0	4.5	123.2	119.9	111.0	98.8	85.6	73.0	61.9	52.5	44.6
12.0	5.0	140.4	136.7	126.5	112.6	97.5	83.2	70.6	59.8	50.9
12.0	6.0	176.3	171.6	158.8	141.3	122.4	104.5	88.6	75.1	63.9
12.0	7.0	213.8	208.1	192.6	171.4	148.5	126.7	107.4	91.1	77.5
12.0	8.0	252.7	245.9	227.6	202.5	175.5	149.7	127.0	107.6	91.5
12.0	10.0	333.9	324.9	300.8	267.6	231.8	197.8	167.8	142.2	121.0
12.0	12.0	418.7	407.4	377.2	335.6	290.7	248.1	210.4	178.3	151.7
12.0	16.0	596.0	580.0	536.9	477.7	413.9	353.2	299.5	253.9	215.9
12.0	20.0	780.4	759.5	703.0	625.6	541.9	462.4	392.2	332.4	282.7

w_1 and b_1 are non-rotation contact area dimensions, see Figure 7

MASTICORD™ FOR SLIDE BEARINGS
MAXIMUM LOAD V_{ar} (kips)

MASTICORD™ Thickness (t) = 1/4 inch (K_t = 2500)

Dimensions (inches)		Angle (A) radians								
Width w_1	Length b_1	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08
3.0	3.0	22.5	18.0	11.3	6.9	3.7	2.1	1.2	0.8	0.6
3.0	3.5	26.3	21.0	13.1	8.1	4.4	2.4	1.5	0.9	0.6
3.0	4.0	30.0	24.0	15.0	9.2	5.0	2.8	1.7	1.1	0.7
3.0	4.5	33.8	27.0	16.9	10.4	5.6	3.1	1.9	1.2	0.8
3.0	5.0	37.5	30.0	18.8	11.5	6.2	3.4	2.1	1.3	0.9
3.0	6.0	45.0	36.0	22.5	13.8	7.5	4.1	2.5	1.6	1.1
3.0	7.0	52.5	42.0	26.3	16.2	8.7	4.8	2.9	1.9	1.3
3.0	8.0	60.0	48.0	30.0	18.5	10.0	5.5	3.3	2.2	1.5
3.0	10.0	75.0	60.0	37.5	23.1	12.5	6.9	4.2	2.7	1.8
3.0	12.0	90.0	72.0	45.0	27.7	15.0	8.3	5.0	3.2	2.2
3.0	16.0	120.0	96.0	60.0	36.9	20.0	11.0	6.7	4.3	2.9
3.0	20.0	150.0	120.0	75.0	46.2	25.0	13.8	8.3	5.4	3.7
3.5	3.0	26.3	21.0	13.1	7.7	3.7	2.1	1.2	0.8	0.6
3.5	3.5	30.6	24.5	15.3	9.0	4.4	2.4	1.5	0.9	0.6
3.5	4.0	35.0	28.0	17.5	10.3	5.0	2.8	1.7	1.1	0.7
3.5	4.5	39.4	31.5	19.7	11.5	5.6	3.1	1.9	1.2	0.8
3.5	5.0	43.8	35.0	21.9	12.8	6.2	3.4	2.1	1.3	0.9
3.5	6.0	52.5	42.0	26.3	15.4	7.5	4.1	2.5	1.6	1.1
3.5	7.0	61.3	49.0	30.6	17.9	8.7	4.8	2.9	1.9	1.3
3.5	8.0	70.0	56.0	35.0	20.5	10.0	5.5	3.3	2.2	1.5
3.5	10.0	87.5	70.0	43.8	25.6	12.5	6.9	4.2	2.7	1.8
3.5	12.0	105.0	84.0	52.5	30.8	15.0	8.3	5.0	3.2	2.2
3.5	16.0	140.0	112.0	70.0	41.0	20.0	11.0	6.7	4.3	2.9
3.5	20.0	175.0	140.0	87.5	51.3	25.0	13.8	8.3	5.4	3.7
4.0	3.0	30.0	24.0	15.0	7.7	3.7	2.1	1.2	0.8	0.6
4.0	3.5	35.0	28.0	17.5	9.0	4.4	2.4	1.5	0.9	0.6
4.0	4.0	40.0	32.0	20.0	10.3	5.0	2.8	1.7	1.1	0.7
4.0	4.5	45.0	36.0	22.5	11.5	5.6	3.1	1.9	1.2	0.8
4.0	5.0	50.0	40.0	25.0	12.8	6.2	3.4	2.1	1.3	0.9
4.0	6.0	60.0	48.0	30.0	15.4	7.5	4.1	2.5	1.6	1.1
4.0	7.0	70.0	56.0	35.0	17.9	8.7	4.8	2.9	1.9	1.3
4.0	8.0	80.0	64.0	40.0	20.5	10.0	5.5	3.3	2.2	1.5
4.0	10.0	100.0	80.0	50.0	25.6	12.5	6.9	4.2	2.7	1.8
4.0	12.0	120.0	96.0	60.0	30.8	15.0	8.3	5.0	3.2	2.2
4.0	16.0	160.0	128.0	80.0	41.0	20.0	11.0	6.7	4.3	2.9
4.0	20.0	200.0	160.0	100.0	51.3	25.0	13.8	8.3	5.4	3.7

w_1 and b_1 are non-rotation contact area dimensions, see Figure 7

MASTICORD™ FOR SLIDE BEARINGS
MAXIMUM LOAD V_{ar} (kips)

MASTICORD™ Thickness (t) = 1/4 inch (K_t = 2500)

Dimensions (inches)		Angle (A) radians								
Width w_1	Length b_1	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08
4.5	3.0	33.8	27.0	16.9	7.7	3.7	2.1	1.2	0.8	0.6
4.5	3.5	39.4	31.5	19.7	9.0	4.4	2.4	1.5	0.9	0.6
4.5	4.0	45.0	36.0	22.5	10.3	5.0	2.8	1.7	1.1	0.7
4.5	4.5	50.6	40.5	25.3	11.5	5.6	3.1	1.9	1.2	0.8
4.5	5.0	56.3	45.0	28.1	12.8	6.2	3.4	2.1	1.3	0.9
4.5	6.0	67.5	54.0	33.8	15.4	7.5	4.1	2.5	1.6	1.1
4.5	7.0	78.8	63.0	39.4	17.9	8.7	4.8	2.9	1.9	1.3
4.5	8.0	90.0	72.0	45.0	20.5	10.0	5.5	3.3	2.2	1.5
4.5	10.0	112.5	90.0	56.3	25.6	12.5	6.9	4.2	2.7	1.8
4.5	12.0	135.0	108.0	67.5	30.8	15.0	8.3	5.0	3.2	2.2
4.5	16.0	180.0	144.0	90.0	41.0	20.0	11.0	6.7	4.3	2.9
4.5	20.0	225.0	180.0	112.5	51.3	25.0	13.8	8.3	5.4	3.7
5.0	3.0	37.5	30.0	18.7	7.7	3.7	2.1	1.2	0.8	0.6
5.0	3.5	43.8	35.0	21.9	9.0	4.4	2.4	1.5	0.9	0.6
5.0	4.0	50.0	40.0	25.0	10.3	5.0	2.8	1.7	1.1	0.7
5.0	4.5	56.3	45.0	28.1	11.5	5.6	3.1	1.9	1.2	0.8
5.0	5.0	62.5	50.0	31.2	12.8	6.2	3.4	2.1	1.3	0.9
5.0	6.0	75.0	60.0	37.5	15.4	7.5	4.1	2.5	1.6	1.1
5.0	7.0	87.5	70.0	43.7	17.9	8.7	4.8	2.9	1.9	1.3
5.0	8.0	100.0	80.0	50.0	20.5	10.0	5.5	3.3	2.2	1.5
5.0	10.0	125.0	100.0	62.5	25.6	12.5	6.9	4.2	2.7	1.8
5.0	12.0	150.0	120.0	75.0	30.8	15.0	8.3	5.0	3.2	2.2
5.0	16.0	200.0	160.0	100.0	41.0	20.0	11.0	6.7	4.3	2.9
5.0	20.0	250.0	200.0	125.0	51.3	25.0	13.8	8.3	5.4	3.7
6.0	3.0	45.0	36.0	18.7	7.7	3.7	2.1	1.2	0.8	0.6
6.0	3.5	52.5	42.0	21.9	9.0	4.4	2.4	1.5	0.9	0.6
6.0	4.0	60.0	48.0	25.0	10.3	5.0	2.8	1.7	1.1	0.7
6.0	4.5	67.5	54.0	28.1	11.5	5.6	3.1	1.9	1.2	0.8
6.0	5.0	75.0	60.0	31.2	12.8	6.2	3.4	2.1	1.3	0.9
6.0	6.0	90.0	72.0	37.5	15.4	7.5	4.1	2.5	1.6	1.1
6.0	7.0	105.0	84.0	43.7	17.9	8.7	4.8	2.9	1.9	1.3
6.0	8.0	120.0	96.0	50.0	20.5	10.0	5.5	3.3	2.2	1.5
6.0	10.0	150.0	120.0	62.5	25.6	12.5	6.9	4.2	2.7	1.8
6.0	12.0	180.0	144.0	75.0	30.8	15.0	8.3	5.0	3.2	2.2
6.0	16.0	240.0	192.0	100.0	41.0	20.0	11.0	6.7	4.3	2.9
6.0	20.0	300.0	240.0	125.0	51.3	25.0	13.8	8.3	5.4	3.7

w_1 and b_1 are non-rotation contact area dimensions, see Figure 7

MASTICORD™ FOR SLIDE BEARINGS
MAXIMUM LOAD V_{ar} (kips)

MASTICORD™ Thickness (t) = 1/4 inch (K_t = 2500)

Dimensions (inches)		Angle (A) radians								
Width w_1	Length b_1	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08
8.0	3.0	60.0	48.0	18.7	7.7	3.7	2.1	1.2	0.8	0.6
8.0	3.5	70.0	56.0	21.9	9.0	4.4	2.4	1.5	0.9	0.6
8.0	4.0	80.0	64.0	25.0	10.3	5.0	2.8	1.7	1.1	0.7
8.0	4.5	90.0	72.0	28.1	11.5	5.6	3.1	1.9	1.2	0.8
8.0	5.0	100.0	80.0	31.2	12.8	6.2	3.4	2.1	1.3	0.9
8.0	6.0	120.0	96.0	37.5	15.4	7.5	4.1	2.5	1.6	1.1
8.0	7.0	140.0	112.0	43.7	17.9	8.7	4.8	2.9	1.9	1.3
8.0	8.0	160.0	128.0	50.0	20.5	10.0	5.5	3.3	2.2	1.5
8.0	10.0	200.0	160.0	62.5	25.6	12.5	6.9	4.2	2.7	1.8
8.0	12.0	240.0	192.0	75.0	30.8	15.0	8.3	5.0	3.2	2.2
8.0	16.0	320.0	256.0	100.0	41.0	20.0	11.0	6.7	4.3	2.9
8.0	20.0	400.0	320.0	125.0	51.3	25.0	13.8	8.3	5.4	3.7
10.0	3.0	75.0	60.0	18.7	7.7	3.7	2.1	1.2	0.8	0.6
10.0	3.5	87.5	70.0	21.9	9.0	4.4	2.4	1.5	0.9	0.6
10.0	4.0	100.0	80.0	25.0	10.3	5.0	2.8	1.7	1.1	0.7
10.0	4.5	112.5	90.0	28.1	11.5	5.6	3.1	1.9	1.2	0.8
10.0	5.0	125.0	100.0	31.2	12.8	6.2	3.4	2.1	1.3	0.9
10.0	6.0	150.0	120.0	37.5	15.4	7.5	4.1	2.5	1.6	1.1
10.0	7.0	175.0	140.0	43.7	17.9	8.7	4.8	2.9	1.9	1.3
10.0	8.0	200.0	160.0	50.0	20.5	10.0	5.5	3.3	2.2	1.5
10.0	10.0	250.0	200.0	62.5	25.6	12.5	6.9	4.2	2.7	1.8
10.0	12.0	300.0	240.0	75.0	30.8	15.0	8.3	5.0	3.2	2.2
10.0	16.0	400.0	320.0	100.0	41.0	20.0	11.0	6.7	4.3	2.9
10.0	20.0	500.0	400.0	125.0	51.3	25.0	13.8	8.3	5.4	3.7
12.0	3.0	90.0	60.0	18.7	7.7	3.7	2.1	1.2	0.8	0.6
12.0	3.5	105.0	70.0	21.9	9.0	4.4	2.4	1.5	0.9	0.6
12.0	4.0	120.0	80.0	25.0	10.3	5.0	2.8	1.7	1.1	0.7
12.0	4.5	135.0	90.0	28.1	11.5	5.6	3.1	1.9	1.2	0.8
12.0	5.0	150.0	100.0	31.2	12.8	6.2	3.4	2.1	1.3	0.9
12.0	6.0	180.0	120.0	37.5	15.4	7.5	4.1	2.5	1.6	1.1
12.0	7.0	210.0	140.0	43.7	17.9	8.7	4.8	2.9	1.9	1.3
12.0	8.0	240.0	160.0	50.0	20.5	10.0	5.5	3.3	2.2	1.5
12.0	10.0	300.0	200.0	62.5	25.6	12.5	6.9	4.2	2.7	1.8
12.0	12.0	360.0	240.0	75.0	30.8	15.0	8.3	5.0	3.2	2.2
12.0	16.0	480.0	320.0	100.0	41.0	20.0	11.0	6.7	4.3	2.9
12.0	20.0	600.0	400.0	125.0	51.3	25.0	13.8	8.3	5.4	3.7

w_1 and b_1 are non-rotation contact area dimensions, see Figure 7

MASTICORD™ FOR SLIDE BEARINGS
MAXIMUM LOAD V_{ar} (kips)

MASTICORD™ Thickness (t) = 3/8 inch (K_t = 1500)

Dimensions (inches)		Angle (A) radians								
Width w_1	Length b_1	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08
3.0	3.0	22.0	19.2	13.8	9.4	6.5	4.6	2.9	1.9	1.3
3.0	3.5	26.3	22.8	16.4	11.2	7.7	5.5	3.4	2.2	1.5
3.0	4.0	30.0	26.1	18.8	12.8	8.8	6.3	3.9	2.6	1.8
3.0	4.5	33.8	29.3	21.1	14.4	9.9	7.1	4.4	2.9	2.0
3.0	5.0	37.5	32.6	23.4	16.0	11.0	7.9	4.9	3.2	2.2
3.0	6.0	45.0	39.1	28.1	19.1	13.2	9.5	5.9	3.8	2.6
3.0	7.0	52.5	45.7	32.8	22.3	15.4	11.0	6.8	4.5	3.1
3.0	8.0	60.0	52.2	37.5	25.5	17.6	12.6	7.8	5.1	3.5
3.0	10.0	75.0	65.2	46.9	31.9	22.1	15.8	9.8	6.4	4.4
3.0	12.0	90.0	78.3	56.3	38.3	26.5	18.9	11.7	7.7	5.3
3.0	16.0	120.0	104.3	75.0	51.1	35.3	25.2	15.6	10.2	7.1
3.0	20.0	150.0	130.4	93.8	63.8	44.1	31.6	19.5	12.8	8.8
3.5	3.0	26.3	22.8	16.4	11.2	7.7	4.7	2.9	1.9	1.3
3.5	3.5	30.6	26.6	19.1	13.0	9.0	5.5	3.4	2.2	1.5
3.5	4.0	35.0	30.4	21.9	14.9	10.3	6.3	3.9	2.6	1.8
3.5	4.5	39.4	34.2	24.6	16.8	11.6	7.1	4.4	2.9	2.0
3.5	5.0	43.8	38.0	27.3	18.6	12.9	7.9	4.9	3.2	2.2
3.5	6.0	52.5	45.7	32.8	22.3	15.4	9.5	5.9	3.8	2.6
3.5	7.0	61.3	53.3	38.3	26.1	18.0	11.0	6.8	4.5	3.1
3.5	8.0	70.0	60.9	43.8	29.8	20.6	12.6	7.8	5.1	3.5
3.5	10.0	87.5	76.1	54.7	37.2	25.7	15.8	9.8	6.4	4.4
3.5	12.0	105.0	91.3	65.6	44.7	30.9	18.9	11.7	7.7	5.3
3.5	16.0	140.0	121.7	87.5	59.6	41.2	25.2	15.6	10.2	7.1
3.5	20.0	175.0	152.2	109.4	74.5	51.5	31.6	19.5	12.8	8.8
4.0	3.0	30.0	26.1	18.8	12.8	8.3	4.7	2.9	1.9	1.3
4.0	3.5	35.0	30.4	21.9	14.9	9.6	5.5	3.4	2.2	1.5
4.0	4.0	40.0	34.8	25.0	17.0	11.0	6.3	3.9	2.6	1.8
4.0	4.5	45.0	39.1	28.1	19.1	12.4	7.1	4.4	2.9	2.0
4.0	5.0	50.0	43.5	31.3	21.3	13.8	7.9	4.9	3.2	2.2
4.0	6.0	60.0	52.2	37.5	25.5	16.5	9.5	5.9	3.8	2.6
4.0	7.0	70.0	60.9	43.8	29.8	19.3	11.0	6.8	4.5	3.1
4.0	8.0	80.0	69.6	50.0	34.0	22.0	12.6	7.8	5.1	3.5
4.0	10.0	100.0	87.0	62.5	42.6	27.6	15.8	9.8	6.4	4.4
4.0	12.0	120.0	104.3	75.0	51.1	33.1	18.9	11.7	7.7	5.3
4.0	16.0	160.0	139.1	100.0	68.1	44.1	25.2	15.6	10.2	7.1
4.0	20.0	200.0	173.9	125.0	85.1	55.1	31.6	19.5	12.8	8.8

w_1 and b_1 are non-rotation contact area dimensions, see Figure 7

MASTICORD™ FOR SLIDE BEARINGS
MAXIMUM LOAD V_{ar} (kips)

MASTICORD™ Thickness (t) = 3/8 inch (K_t = 1500)

Dimensions (inches)		Angle (A) radians								
Width w_1	Length b_1	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08
4.5	3.0	33.8	29.3	21.1	14.4	8.3	4.7	2.9	1.9	1.3
4.5	3.5	39.4	34.2	24.6	16.8	9.6	5.5	3.4	2.2	1.5
4.5	4.0	45.0	39.1	28.1	19.1	11.0	6.3	3.9	2.6	1.8
4.5	4.5	50.6	44.0	31.6	21.5	12.4	7.1	4.4	2.9	2.0
4.5	5.0	56.3	48.9	35.2	23.9	13.8	7.9	4.9	3.2	2.2
4.5	6.0	67.5	58.7	42.2	28.7	16.5	9.5	5.9	3.8	2.6
4.5	7.0	78.8	68.5	49.2	33.5	19.3	11.0	6.8	4.5	3.1
4.5	8.0	90.0	78.3	56.3	38.3	22.0	12.6	7.8	5.1	3.5
4.5	10.0	112.5	97.8	70.3	47.9	27.6	15.8	9.8	6.4	4.4
4.5	12.0	135.0	117.4	84.4	57.4	33.1	18.9	11.7	7.7	5.3
4.5	16.0	180.0	156.5	112.5	76.6	44.1	25.2	15.6	10.2	7.1
4.5	20.0	225.0	195.7	140.6	95.7	55.1	31.6	19.5	12.8	8.8
5.0	3.0	37.5	32.6	23.4	16.0	8.3	4.7	2.9	1.9	1.3
5.0	3.5	43.8	38.0	27.3	18.6	9.6	5.5	3.4	2.2	1.5
5.0	4.0	50.0	43.5	31.3	21.3	11.0	6.3	3.9	2.6	1.8
5.0	4.5	56.3	48.9	35.2	23.9	12.4	7.1	4.4	2.9	2.0
5.0	5.0	62.5	54.3	39.1	26.6	13.8	7.9	4.9	3.2	2.2
5.0	6.0	75.0	65.2	46.9	31.9	16.5	9.5	5.9	3.8	2.6
5.0	7.0	87.5	76.1	54.7	37.2	19.3	11.0	6.8	4.5	3.1
5.0	8.0	100.0	87.0	62.5	42.5	22.0	12.6	7.8	5.1	3.5
5.0	10.0	125.0	108.7	78.1	53.2	27.6	15.8	9.8	6.4	4.4
5.0	12.0	150.0	130.4	93.8	63.8	33.1	18.9	11.7	7.7	5.3
5.0	16.0	200.0	173.9	125.0	85.1	44.1	25.2	15.6	10.2	7.1
5.0	20.0	250.0	217.4	156.3	106.4	55.1	31.6	19.5	12.8	8.8
6.0	3.0	45.0	39.1	28.1	16.0	8.3	4.7	2.9	1.9	1.3
6.0	3.5	52.5	45.7	32.8	18.6	9.6	5.5	3.4	2.2	1.5
6.0	4.0	60.0	52.2	37.5	21.3	11.0	6.3	3.9	2.6	1.8
6.0	4.5	67.5	58.7	42.2	23.9	12.4	7.1	4.4	2.9	2.0
6.0	5.0	75.0	65.2	46.9	26.6	13.8	7.9	4.9	3.2	2.2
6.0	6.0	90.0	78.3	56.3	31.9	16.5	9.5	5.9	3.8	2.6
6.0	7.0	105.0	91.3	65.6	37.2	19.3	11.0	6.8	4.5	3.1
6.0	8.0	120.0	104.3	75.0	42.5	22.0	12.6	7.8	5.1	3.5
6.0	10.0	150.0	130.4	93.8	53.2	27.6	15.8	9.8	6.4	4.4
6.0	12.0	180.0	156.5	112.5	63.8	33.1	18.9	11.7	7.7	5.3
6.0	16.0	240.0	208.7	150.0	85.1	44.1	25.2	15.6	10.2	7.1
6.0	20.0	300.0	260.9	187.5	106.4	55.1	31.6	19.5	12.8	8.8

w_1 and b_1 are non-rotation contact area dimensions, see Figure 7

MASTICORD™ FOR SLIDE BEARINGS
MAXIMUM LOAD V_{ar} (kips)

MASTICORD™ Thickness (t) = 3/8 inch (K_t = 1500)

Dimensions (inches)		Angle (A) radians								
Width w_1	Length b_1	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08
8.0	3.0	60.0	52.2	35.2	16.0	8.3	4.7	2.9	1.9	1.3
8.0	3.5	70.0	60.9	41.0	18.6	9.6	5.5	3.4	2.2	1.5
8.0	4.0	80.0	69.6	46.9	21.3	11.0	6.3	3.9	2.6	1.8
8.0	4.5	90.0	78.3	52.7	23.9	12.4	7.1	4.4	2.9	2.0
8.0	5.0	100.0	87.0	58.6	26.6	13.8	7.9	4.9	3.2	2.2
8.0	6.0	120.0	104.3	70.3	31.9	16.5	9.5	5.9	3.8	2.6
8.0	7.0	140.0	121.7	82.0	37.2	19.3	11.0	6.8	4.5	3.1
8.0	8.0	160.0	139.1	93.7	42.5	22.0	12.6	7.8	5.1	3.5
8.0	10.0	200.0	173.9	117.2	53.2	27.6	15.8	9.8	6.4	4.4
8.0	12.0	240.0	208.7	140.6	63.8	33.1	18.9	11.7	7.7	5.3
8.0	16.0	320.0	278.3	187.5	85.1	44.1	25.2	15.6	10.2	7.1
8.0	20.0	400.0	347.8	234.3	106.4	55.1	31.6	19.5	12.8	8.8
10.0	3.0	75.0	65.2	35.2	16.0	8.3	4.7	2.9	1.9	1.3
10.0	3.5	87.5	76.1	41.0	18.6	9.6	5.5	3.4	2.2	1.5
10.0	4.0	100.0	87.0	46.9	21.3	11.0	6.3	3.9	2.6	1.8
10.0	4.5	112.5	97.8	52.7	23.9	12.4	7.1	4.4	2.9	2.0
10.0	5.0	125.0	108.7	58.6	26.6	13.8	7.9	4.9	3.2	2.2
10.0	6.0	150.0	130.4	70.3	31.9	16.5	9.5	5.9	3.8	2.6
10.0	7.0	175.0	152.2	82.0	37.2	19.3	11.0	6.8	4.5	3.1
10.0	8.0	200.0	173.9	93.7	42.5	22.0	12.6	7.8	5.1	3.5
10.0	10.0	250.0	217.4	117.2	53.2	27.6	15.8	9.8	6.4	4.4
10.0	12.0	300.0	260.9	140.6	63.8	33.1	18.9	11.7	7.7	5.3
10.0	16.0	400.0	347.8	187.5	85.1	44.1	25.2	15.6	10.2	7.1
10.0	20.0	500.0	434.8	234.3	106.4	55.1	31.6	19.5	12.8	8.8
12.0	3.0	90.0	78.3	35.2	16.0	8.3	4.7	2.9	1.9	1.3
12.0	3.5	105.0	91.3	41.0	18.6	9.6	5.5	3.4	2.2	1.5
12.0	4.0	120.0	104.3	46.9	21.3	11.0	6.3	3.9	2.6	1.8
12.0	4.5	135.0	117.4	52.7	23.9	12.4	7.1	4.4	2.9	2.0
12.0	5.0	150.0	130.4	58.6	26.6	13.8	7.9	4.9	3.2	2.2
12.0	6.0	180.0	156.5	70.3	31.9	16.5	9.5	5.9	3.8	2.6
12.0	7.0	210.0	182.6	82.0	37.2	19.3	11.0	6.8	4.5	3.1
12.0	8.0	240.0	208.7	93.7	42.5	22.0	12.6	7.8	5.1	3.5
12.0	10.0	300.0	260.9	117.2	53.2	27.6	15.8	9.8	6.4	4.4
12.0	12.0	360.0	313.0	140.6	63.8	33.1	18.9	11.7	7.7	5.3
12.0	16.0	480.0	417.4	187.5	85.1	44.1	25.2	15.6	10.2	7.1
12.0	20.0	600.0	521.7	234.3	106.4	55.1	31.6	19.5	12.8	8.8

w_1 and b_1 are non-rotation contact area dimensions, see Figure 7

MASTICORD™ FOR SLIDE BEARINGS
MAXIMUM LOAD V_{ar} (kips)

MASTICORD™ Thickness (t) = 1/2 inch (K_t = 500)

Dimensions (inches)		Angle (A) radians								
Width w_1	Length b_1	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08
3.0	3.0	20.0	19.0	16.6	13.8	11.1	8.9	7.1	5.8	4.5
3.0	3.5	23.9	22.7	19.9	16.5	13.3	10.6	8.5	6.9	5.2
3.0	4.0	27.8	26.5	23.2	19.2	15.4	12.4	9.9	8.1	5.9
3.0	4.5	31.8	30.3	26.5	21.9	17.7	14.1	11.4	9.2	6.7
3.0	5.0	35.9	34.2	29.9	24.7	19.9	15.9	12.8	10.3	7.4
3.0	6.0	44.1	42.0	36.7	30.4	24.5	19.6	15.7	12.4	8.9
3.0	7.0	52.4	49.9	43.6	36.1	29.1	23.3	18.7	14.5	10.4
3.0	8.0	60.0	57.1	50.0	41.4	33.3	26.7	21.4	16.5	11.9
3.0	10.0	75.0	71.4	62.5	51.7	41.7	33.3	26.8	20.7	14.8
3.0	12.0	90.0	85.7	75.0	62.1	50.0	40.0	32.1	24.8	17.8
3.0	16.0	120.0	114.3	100.0	82.8	66.7	53.3	42.9	33.1	23.8
3.0	20.0	150.0	142.9	125.0	103.4	83.3	66.7	53.6	41.3	29.7
3.5	3.0	23.9	22.7	19.9	16.5	13.3	10.6	8.5	6.2	4.5
3.5	3.5	28.6	27.2	23.8	19.7	15.9	12.7	10.2	7.2	5.2
3.5	4.0	33.4	31.8	27.8	23.0	18.6	14.9	11.9	8.3	5.9
3.5	4.5	38.3	36.5	31.9	26.4	21.3	17.0	13.4	9.3	6.7
3.5	5.0	43.3	41.3	36.1	29.9	24.1	19.3	14.9	10.3	7.4
3.5	6.0	52.5	50.0	43.8	36.2	29.2	23.3	17.8	12.4	8.9
3.5	7.0	61.3	58.3	51.0	42.2	34.0	27.2	20.8	14.5	10.4
3.5	8.0	70.0	66.7	58.3	48.3	38.9	31.1	23.8	16.5	11.9
3.5	10.0	87.5	83.3	72.9	60.3	48.6	38.9	29.7	20.7	14.8
3.5	12.0	105.0	100.0	87.5	72.4	58.3	46.7	35.7	24.8	17.8
3.5	16.0	140.0	133.3	116.7	96.6	77.8	62.2	47.6	33.1	23.8
3.5	20.0	175.0	166.7	145.8	120.7	97.2	77.8	59.5	41.3	29.7
4.0	3.0	27.8	26.5	23.2	19.2	15.4	12.4	8.9	6.2	4.5
4.0	3.5	33.4	31.8	27.8	23.0	18.6	14.9	10.4	7.2	5.2
4.0	4.0	39.2	37.3	32.6	27.0	21.8	17.4	11.9	8.3	5.9
4.0	4.5	45.0	42.9	37.5	31.0	25.0	20.0	13.4	9.3	6.7
4.0	5.0	50.0	47.6	41.7	34.5	27.8	22.2	14.9	10.3	7.4
4.0	6.0	60.0	57.1	50.0	41.4	33.3	26.6	17.8	12.4	8.9
4.0	7.0	70.0	66.7	58.3	48.3	38.9	31.1	20.8	14.5	10.4
4.0	8.0	80.0	76.2	66.7	55.2	44.4	35.5	23.8	16.5	11.9
4.0	10.0	100.0	95.2	83.3	69.0	55.6	44.4	29.7	20.7	14.8
4.0	12.0	120.0	114.3	100.0	82.8	66.7	53.3	35.7	24.8	17.8
4.0	16.0	160.0	152.4	133.3	110.3	88.9	71.1	47.6	33.1	23.8
4.0	20.0	200.0	190.5	166.7	137.9	111.1	88.8	59.5	41.3	29.7

w_1 and b_1 are non-rotation contact area dimensions, see Figure 7

MASTICORD™ FOR SLIDE BEARINGS
MAXIMUM LOAD V_{ar} (kips)

MASTICORD™ Thickness (t) = 1/2 inch (K_t = 500)

Dimensions (inches)		Angle (A) radians								
Width w_1	Length b_1	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08
4.5	3.0	31.8	30.3	26.5	21.9	17.7	13.3	8.9	6.2	4.5
4.5	3.5	38.3	36.5	31.9	26.4	21.3	15.5	10.4	7.2	5.2
4.5	4.0	45.0	42.9	37.5	31.0	25.0	17.8	11.9	8.3	5.9
4.5	4.5	50.6	48.2	42.2	34.9	28.1	20.0	13.4	9.3	6.7
4.5	5.0	56.3	53.6	46.9	38.8	31.3	22.2	14.9	10.3	7.4
4.5	6.0	67.5	64.3	56.3	46.6	37.5	26.6	17.8	12.4	8.9
4.5	7.0	78.8	75.0	65.6	54.3	43.8	31.1	20.8	14.5	10.4
4.5	8.0	90.0	85.7	75.0	62.1	50.0	35.5	23.8	16.5	11.9
4.5	10.0	112.5	107.1	93.8	77.6	62.5	44.4	29.7	20.7	14.8
4.5	12.0	135.0	128.6	112.5	93.1	75.0	53.3	35.7	24.8	17.8
4.5	16.0	180.0	171.4	150.0	124.1	100.0	71.1	47.6	33.1	23.8
4.5	20.0	225.0	214.3	187.5	155.2	125.0	88.8	59.5	41.3	29.7
5.0	3.0	35.9	34.2	29.9	24.7	19.9	13.3	8.9	6.2	4.5
5.0	3.5	43.3	41.3	36.1	29.9	24.1	15.5	10.4	7.2	5.2
5.0	4.0	50.0	47.6	41.7	34.5	27.8	17.8	11.9	8.3	5.9
5.0	4.5	56.3	53.6	46.9	38.8	31.2	20.0	13.4	9.3	6.7
5.0	5.0	62.5	59.5	52.1	43.1	34.7	22.2	14.9	10.3	7.4
5.0	6.0	75.0	71.4	62.5	51.7	41.6	26.6	17.8	12.4	8.9
5.0	7.0	87.5	83.3	72.9	60.3	48.6	31.1	20.8	14.5	10.4
5.0	8.0	100.0	95.2	83.3	69.0	55.5	35.5	23.8	16.5	11.9
5.0	10.0	125.0	119.0	104.2	86.2	69.4	44.4	29.7	20.7	14.8
5.0	12.0	150.0	142.9	125.0	103.4	83.3	53.3	35.7	24.8	17.8
5.0	16.0	200.0	190.5	166.7	137.9	111.1	71.1	47.6	33.1	23.8
5.0	20.0	250.0	238.1	208.3	172.4	138.8	88.8	59.5	41.3	29.7
6.0	3.0	44.1	42.0	36.7	30.4	20.8	13.3	8.9	6.2	4.5
6.0	3.5	52.5	50.0	43.8	36.2	24.3	15.5	10.4	7.2	5.2
6.0	4.0	60.0	57.1	50.0	41.4	27.8	17.8	11.9	8.3	5.9
6.0	4.5	67.5	64.3	56.3	46.6	31.2	20.0	13.4	9.3	6.7
6.0	5.0	75.0	71.4	62.5	51.7	34.7	22.2	14.9	10.3	7.4
6.0	6.0	90.0	85.7	75.0	62.1	41.6	26.6	17.8	12.4	8.9
6.0	7.0	105.0	100.0	87.5	72.4	48.6	31.1	20.8	14.5	10.4
6.0	8.0	120.0	114.3	100.0	82.8	55.5	35.5	23.8	16.5	11.9
6.0	10.0	150.0	142.9	125.0	103.4	69.4	44.4	29.7	20.7	14.8
6.0	12.0	180.0	171.4	150.0	124.1	83.3	53.3	35.7	24.8	17.8
6.0	16.0	240.0	228.6	200.0	165.5	111.1	71.1	47.6	33.1	23.8
6.0	20.0	300.0	285.7	250.0	206.9	138.8	88.8	59.5	41.3	29.7

w_1 and b_1 are non-rotation contact area dimensions, see Figure 7

MASTICORD™ FOR SLIDE BEARINGS
MAXIMUM LOAD V_{ar} (kips)

MASTICORD™ Thickness (t) = 1/2 inch (K_t = 500)

Dimensions (inches)		Angle (A) radians								
Width w_1	Length b_1	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08
8.0	3.0	60.0	57.1	50.0	34.5	20.8	13.3	8.9	6.2	4.5
8.0	3.5	70.0	66.7	58.3	40.2	24.3	15.5	10.4	7.2	5.2
8.0	4.0	80.0	76.2	66.7	46.0	27.8	17.8	11.9	8.3	5.9
8.0	4.5	90.0	85.7	75.0	51.7	31.2	20.0	13.4	9.3	6.7
8.0	5.0	100.0	95.2	83.3	57.5	34.7	22.2	14.9	10.3	7.4
8.0	6.0	120.0	114.3	100.0	68.9	41.6	26.6	17.8	12.4	8.9
8.0	7.0	140.0	133.3	116.7	80.4	48.6	31.1	20.8	14.5	10.4
8.0	8.0	160.0	152.4	133.3	91.9	55.5	35.5	23.8	16.5	11.9
8.0	10.0	200.0	190.5	166.7	114.9	69.4	44.4	29.7	20.7	14.8
8.0	12.0	240.0	228.6	200.0	137.9	83.3	53.3	35.7	24.8	17.8
8.0	16.0	320.0	304.8	266.7	183.9	111.1	71.1	47.6	33.1	23.8
8.0	20.0	400.0	381.0	333.3	229.8	138.8	88.8	59.5	41.3	29.7
10.0	3.0	75.0	71.4	62.5	34.5	20.8	13.3	8.9	6.2	4.5
10.0	3.5	87.5	83.3	72.9	40.2	24.3	15.5	10.4	7.2	5.2
10.0	4.0	100.0	95.2	83.3	46.0	27.8	17.8	11.9	8.3	5.9
10.0	4.5	112.5	107.1	93.7	51.7	31.2	20.0	13.4	9.3	6.7
10.0	5.0	125.0	119.0	104.2	57.5	34.7	22.2	14.9	10.3	7.4
10.0	6.0	150.0	142.9	125.0	68.9	41.6	26.6	17.8	12.4	8.9
10.0	7.0	175.0	166.7	145.8	80.4	48.6	31.1	20.8	14.5	10.4
10.0	8.0	200.0	190.5	166.6	91.9	55.5	35.5	23.8	16.5	11.9
10.0	10.0	250.0	238.1	208.3	114.9	69.4	44.4	29.7	20.7	14.8
10.0	12.0	300.0	285.7	250.0	137.9	83.3	53.3	35.7	24.8	17.8
10.0	16.0	400.0	381.0	333.3	183.9	111.1	71.1	47.6	33.1	23.8
10.0	20.0	500.0	476.2	416.6	229.8	138.8	88.8	59.5	41.3	29.7
12.0	3.0	90.0	85.7	62.5	34.5	20.8	13.3	8.9	6.2	4.5
12.0	3.5	105.0	100.0	72.9	40.2	24.3	15.5	10.4	7.2	5.2
12.0	4.0	120.0	114.3	83.3	46.0	27.8	17.8	11.9	8.3	5.9
12.0	4.5	135.0	128.6	93.7	51.7	31.2	20.0	13.4	9.3	6.7
12.0	5.0	150.0	142.9	104.2	57.5	34.7	22.2	14.9	10.3	7.4
12.0	6.0	180.0	171.4	125.0	68.9	41.6	26.6	17.8	12.4	8.9
12.0	7.0	210.0	200.0	145.8	80.4	48.6	31.1	20.8	14.5	10.4
12.0	8.0	240.0	228.6	166.6	91.9	55.5	35.5	23.8	16.5	11.9
12.0	10.0	300.0	285.7	208.3	114.9	69.4	44.4	29.7	20.7	14.8
12.0	12.0	360.0	342.9	250.0	137.9	83.3	53.3	35.7	24.8	17.8
12.0	16.0	480.0	457.1	333.3	183.9	111.1	71.1	47.6	33.1	23.8
12.0	20.0	600.0	571.4	416.6	229.8	138.8	88.8	59.5	41.3	29.7

w_1 and b_1 are non-rotation contact area dimensions, see Figure 7

MASTICORD™ FOR SLIDE BEARINGS
MAXIMUM LOAD V_{ar} (kips)

MASTICORD™ Thickness (t) = 5/8 inch (K_t = 400)

Dimensions (inches)		Angle (A) radians								
Width w_1	Length b_1	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08
3.0	3.0	18.7	18.0	16.1	13.8	11.4	9.4	7.7	6.3	5.3
3.0	3.5	22.3	21.4	19.2	16.4	13.6	11.1	9.1	7.5	6.3
3.0	4.0	25.9	24.9	22.3	19.1	15.8	13.0	10.6	8.8	7.3
3.0	4.5	29.6	28.4	25.5	21.8	18.0	14.8	12.1	10.0	8.3
3.0	5.0	33.3	32.0	28.7	24.5	20.3	16.6	13.6	11.2	9.3
3.0	6.0	40.8	39.2	35.1	30.0	24.9	20.4	16.7	13.8	11.5
3.0	7.0	48.3	46.5	41.7	35.5	29.5	24.2	19.8	16.3	13.6
3.0	8.0	56.0	53.8	48.2	41.1	34.1	28.0	22.9	18.9	15.7
3.0	10.0	71.3	68.6	61.5	52.4	43.5	35.7	29.2	24.1	20.0
3.0	12.0	86.8	83.5	74.8	63.8	52.9	43.4	35.6	29.3	24.4
3.0	16.0	118.0	113.4	101.7	86.8	71.9	59.0	48.4	39.9	33.1
3.0	20.0	149.3	143.5	128.7	109.8	91.0	74.6	61.2	50.4	41.9
3.5	3.0	22.3	21.4	19.2	16.4	13.6	11.1	9.1	7.5	6.3
3.5	3.5	26.6	25.6	22.9	19.6	16.2	13.3	10.9	9.0	7.5
3.5	4.0	31.0	29.8	26.7	22.8	18.9	15.5	12.7	10.5	8.7
3.5	4.5	35.5	34.1	30.6	26.1	21.6	17.7	14.5	12.0	9.9
3.5	5.0	40.0	38.5	34.5	29.4	24.4	20.0	16.4	13.5	10.9
3.5	6.0	49.2	47.3	42.4	36.2	30.0	24.6	20.2	16.6	13.1
3.5	7.0	58.5	56.2	50.4	43.0	35.7	29.2	24.0	19.8	15.3
3.5	8.0	67.9	65.3	58.5	49.9	41.4	33.9	27.8	22.9	17.5
3.5	10.0	86.9	83.5	74.9	63.9	53.0	43.4	35.6	29.4	21.9
3.5	12.0	105.0	101.0	90.5	77.2	64.0	52.5	43.0	35.5	26.3
3.5	16.0	140.0	134.6	120.7	102.9	85.4	70.0	57.4	47.3	35.0
3.5	20.0	175.0	168.3	150.9	128.7	106.7	87.5	71.7	59.1	43.8
4.0	3.0	25.9	24.9	22.3	19.1	15.8	13.0	10.6	8.8	6.6
4.0	3.5	31.0	29.8	26.7	22.8	18.9	15.5	12.7	10.5	7.7
4.0	4.0	36.2	34.8	31.2	26.6	22.1	18.1	14.9	12.0	8.8
4.0	4.5	41.5	39.9	35.8	30.5	25.3	20.8	17.0	13.6	9.9
4.0	5.0	46.9	45.1	40.5	34.5	28.6	23.5	19.2	15.1	10.9
4.0	6.0	57.9	55.7	49.9	42.6	35.3	28.9	23.7	18.1	13.1
4.0	7.0	69.0	66.4	59.5	50.7	42.1	34.5	28.3	21.1	15.3
4.0	8.0	80.0	76.9	69.0	58.8	48.8	40.0	32.8	24.1	17.5
4.0	10.0	100.0	96.2	86.2	73.5	61.0	50.0	41.0	30.1	21.9
4.0	12.0	120.0	115.4	103.4	88.2	73.2	60.0	49.2	36.1	26.3
4.0	16.0	160.0	153.8	137.9	117.6	97.6	80.0	65.6	48.2	35.0
4.0	20.0	200.0	192.3	172.4	147.1	122.0	100.0	82.0	60.2	43.8

w_1 and b_1 are non-rotation contact area dimensions, see Figure 7

MASTICORD™ FOR SLIDE BEARINGS
MAXIMUM LOAD V_{ar} (kips)

MASTICORD™ Thickness (t) = 5/8 inch (K_t = 400)

Dimensions (inches)		Angle (A) radians								
Width w_1	Length b_1	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08
4.5	3.0	29.6	28.4	25.5	21.8	18.0	14.8	12.1	9.0	6.6
4.5	3.5	35.5	34.1	30.6	26.1	21.6	17.7	14.5	10.5	7.7
4.5	4.0	41.5	39.9	35.8	30.5	25.3	20.8	17.0	12.0	8.8
4.5	4.5	47.7	45.9	41.1	35.1	29.1	23.9	19.2	13.6	9.9
4.5	5.0	54.0	51.9	46.6	39.7	32.9	27.0	21.3	15.1	10.9
4.5	6.0	66.8	64.2	57.6	49.1	40.7	33.4	25.6	18.1	13.1
4.5	7.0	78.8	75.7	67.9	57.9	48.0	39.4	29.8	21.1	15.3
4.5	8.0	90.0	86.5	77.6	66.2	54.9	45.0	34.1	24.1	17.5
4.5	10.0	112.5	108.2	97.0	82.7	68.6	56.3	42.6	30.1	21.9
4.5	12.0	135.0	129.8	116.4	99.3	82.3	67.5	51.2	36.1	26.3
4.5	16.0	180.0	173.1	155.2	132.4	109.8	90.0	68.2	48.2	35.0
4.5	20.0	225.0	216.3	194.0	165.4	137.2	112.5	85.3	60.2	43.8
5.0	3.0	33.3	32.0	28.7	24.5	20.3	16.6	12.8	9.0	6.6
5.0	3.5	40.0	38.5	34.5	29.4	24.4	20.0	14.9	10.5	7.7
5.0	4.0	46.9	45.1	40.5	34.5	28.6	23.5	17.1	12.0	8.8
5.0	4.5	54.0	51.9	46.6	39.7	32.9	27.0	19.2	13.6	9.9
5.0	5.0	61.2	58.9	52.8	45.0	37.3	30.6	21.3	15.1	10.9
5.0	6.0	75.0	72.1	64.7	55.1	45.7	37.5	25.6	18.1	13.1
5.0	7.0	87.5	84.1	75.4	64.3	53.4	43.7	29.8	21.1	15.3
5.0	8.0	100.0	96.2	86.2	73.5	61.0	50.0	34.1	24.1	17.5
5.0	10.0	125.0	120.2	107.8	91.9	76.2	62.4	42.6	30.1	21.9
5.0	12.0	150.0	144.2	129.3	110.3	91.5	74.9	51.2	36.1	26.3
5.0	16.0	200.0	192.3	172.4	147.1	122.0	99.9	68.2	48.2	35.0
5.0	20.0	250.0	240.4	215.5	183.8	152.4	124.9	85.3	60.2	43.8
6.0	3.0	40.8	39.2	35.1	30.0	24.9	18.7	12.8	9.0	6.6
6.0	3.5	49.2	47.3	42.4	36.2	30.0	21.9	14.9	10.5	7.7
6.0	4.0	57.9	55.7	49.9	42.6	35.3	25.0	17.1	12.0	8.8
6.0	4.5	66.8	64.2	57.6	49.1	40.7	28.1	19.2	13.6	9.9
6.0	5.0	75.0	72.1	64.7	55.1	45.7	31.2	21.3	15.1	10.9
6.0	6.0	90.0	86.5	77.6	66.2	54.9	37.5	25.6	18.1	13.1
6.0	7.0	105.0	101.0	90.5	77.2	64.0	43.7	29.8	21.1	15.3
6.0	8.0	120.0	115.4	103.4	88.2	73.2	50.0	34.1	24.1	17.5
6.0	10.0	150.0	144.2	129.3	110.3	91.5	62.4	42.6	30.1	21.9
6.0	12.0	180.0	173.1	155.2	132.4	109.8	74.9	51.2	36.1	26.3
6.0	16.0	240.0	230.8	206.9	176.5	146.3	99.9	68.2	48.2	35.0
6.0	20.0	300.0	288.5	258.6	220.6	182.9	124.9	85.3	60.2	43.8

w_1 and b_1 are non-rotation contact area dimensions, see Figure 7

MASTICORD™ FOR SLIDE BEARINGS
MAXIMUM LOAD V_{ar} (kips)

MASTICORD™ Thickness (t) = 5/8 inch (K_t = 400)

Dimensions (inches)		Angle (A) radians								
Width w_1	Length b_1	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08
8.0	3.0	56.0	53.8	48.2	41.1	28.6	18.7	12.8	9.0	6.6
8.0	3.5	67.9	65.3	58.5	49.9	33.3	21.9	14.9	10.5	7.7
8.0	4.0	80.0	76.9	69.0	58.8	38.1	25.0	17.1	12.0	8.8
8.0	4.5	90.0	86.5	77.6	66.2	42.9	28.1	19.2	13.6	9.9
8.0	5.0	100.0	96.2	86.2	73.5	47.6	31.2	21.3	15.1	10.9
8.0	6.0	120.0	115.4	103.4	88.2	57.1	37.5	25.6	18.1	13.1
8.0	7.0	140.0	134.6	120.7	102.9	66.7	43.7	29.8	21.1	15.3
8.0	8.0	160.0	153.8	137.9	117.6	76.2	50.0	34.1	24.1	17.5
8.0	10.0	200.0	192.3	172.4	147.1	95.2	62.4	42.6	30.1	21.9
8.0	12.0	240.0	230.8	206.9	176.5	114.3	74.9	51.2	36.1	26.3
8.0	16.0	320.0	307.7	275.9	235.3	152.4	99.9	68.2	48.2	35.0
8.0	20.0	400.0	384.6	344.8	294.1	190.4	124.9	85.3	60.2	43.8
10.0	3.0	71.3	68.6	61.5	45.9	28.6	18.7	12.8	9.0	6.6
10.0	3.5	86.9	83.5	74.9	53.6	33.3	21.9	14.9	10.5	7.7
10.0	4.0	100.0	96.2	86.2	61.3	38.1	25.0	17.1	12.0	8.8
10.0	4.5	112.5	108.2	97.0	68.9	42.9	28.1	19.2	13.6	9.9
10.0	5.0	125.0	120.2	107.8	76.6	47.6	31.2	21.3	15.1	10.9
10.0	6.0	150.0	144.2	129.3	91.9	57.1	37.5	25.6	18.1	13.1
10.0	7.0	175.0	168.3	150.9	107.2	66.7	43.7	29.8	21.1	15.3
10.0	8.0	200.0	192.3	172.4	122.5	76.2	50.0	34.1	24.1	17.5
10.0	10.0	250.0	240.4	215.5	153.1	95.2	62.4	42.6	30.1	21.9
10.0	12.0	300.0	288.5	258.6	183.8	114.3	74.9	51.2	36.1	26.3
10.0	16.0	400.0	384.6	344.8	245.0	152.4	99.9	68.2	48.2	35.0
10.0	20.0	500.0	480.8	431.0	306.3	190.4	124.9	85.3	60.2	43.8
12.0	3.0	86.8	83.5	74.8	45.9	28.6	18.7	12.8	9.0	6.6
12.0	3.5	105.0	101.0	90.5	53.6	33.3	21.9	14.9	10.5	7.7
12.0	4.0	120.0	115.4	103.4	61.3	38.1	25.0	17.1	12.0	8.8
12.0	4.5	135.0	129.8	116.4	68.9	42.9	28.1	19.2	13.6	9.9
12.0	5.0	150.0	144.2	129.3	76.6	47.6	31.2	21.3	15.1	10.9
12.0	6.0	180.0	173.1	155.2	91.9	57.1	37.5	25.6	18.1	13.1
12.0	7.0	210.0	201.9	181.0	107.2	66.7	43.7	29.8	21.1	15.3
12.0	8.0	240.0	230.8	206.9	122.5	76.2	50.0	34.1	24.1	17.5
12.0	10.0	300.0	288.5	258.6	153.1	95.2	62.4	42.6	30.1	21.9
12.0	12.0	360.0	346.2	310.3	183.8	114.3	74.9	51.2	36.1	26.3
12.0	16.0	480.0	461.5	413.8	245.0	152.4	99.9	68.2	48.2	35.0
12.0	20.0	600.0	576.9	517.2	306.3	190.4	124.9	85.3	60.2	43.8

w_1 and b_1 are non-rotation contact area dimensions, see Figure 7

MASTICORD™ FOR SLIDE BEARINGS
MAXIMUM LOAD V_{ar} (kips)

MASTICORD™ Thickness (t) = 3/4 inch (K_t = 325)

Dimensions (inches)		Angle (A) radians								
Width w_1	Length b_1	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08
3.0	3.0	17.9	17.3	15.8	13.9	11.8	9.9	8.3	6.9	5.8
3.0	3.5	21.3	20.6	18.8	16.4	14.0	11.7	9.8	8.2	6.9
3.0	4.0	24.7	23.9	21.8	19.1	16.2	13.6	11.4	9.5	8.0
3.0	4.5	28.1	27.2	24.9	21.7	18.5	15.5	12.9	10.8	9.1
3.0	5.0	31.6	30.6	27.9	24.4	20.8	17.4	14.5	12.2	10.2
3.0	6.0	38.6	37.3	34.1	29.8	25.4	21.3	17.8	14.9	12.5
3.0	7.0	45.6	44.2	40.4	35.3	30.0	25.2	21.0	17.6	14.8
3.0	8.0	52.7	51.1	46.7	40.8	34.7	29.1	24.3	20.3	17.1
3.0	10.0	67.1	65.0	59.4	51.9	44.1	37.0	30.9	25.9	21.8
3.0	12.0	81.5	79.0	72.1	63.1	53.6	45.0	37.6	31.4	26.5
3.0	16.0	110.6	107.1	97.8	85.5	72.7	61.0	50.9	42.6	35.9
3.0	20.0	139.7	135.3	123.6	108.1	91.9	77.1	64.4	53.9	45.4
3.5	3.0	21.3	20.6	18.8	16.4	14.0	11.7	9.8	8.2	6.9
3.5	3.5	25.3	24.5	22.4	19.6	16.6	14.0	11.7	9.8	8.2
3.5	4.0	29.4	28.5	26.0	22.8	19.4	16.2	13.6	11.3	9.6
3.5	4.5	33.6	32.5	29.7	26.0	22.1	18.5	15.5	13.0	10.9
3.5	5.0	37.8	36.6	33.5	29.2	24.9	20.9	17.4	14.6	12.3
3.5	6.0	46.3	44.9	41.0	35.9	30.5	25.6	21.4	17.9	15.0
3.5	7.0	55.0	53.3	48.7	42.5	36.2	30.3	25.3	21.2	17.9
3.5	8.0	63.7	61.7	56.4	49.3	41.9	35.1	29.4	24.6	20.7
3.5	10.0	81.3	78.8	72.0	62.9	53.5	44.9	37.5	31.4	26.4
3.5	12.0	99.1	96.0	87.7	76.7	65.2	54.7	45.7	38.2	32.2
3.5	16.0	134.9	130.7	119.4	104.4	88.8	74.4	62.2	52.0	43.8
3.5	20.0	170.9	165.5	151.3	132.2	112.4	94.3	78.8	65.9	55.5
4.0	3.0	24.7	23.9	21.8	19.1	16.2	13.6	11.4	9.5	8.0
4.0	3.5	29.4	28.5	26.0	22.8	19.4	16.2	13.6	11.3	9.6
4.0	4.0	34.3	33.2	30.3	26.5	22.5	18.9	15.8	13.2	11.1
4.0	4.5	39.2	38.0	34.7	30.3	25.8	21.6	18.1	15.1	12.7
4.0	5.0	44.2	42.8	39.1	34.2	29.1	24.4	20.4	17.1	14.4
4.0	6.0	54.4	52.6	48.1	42.1	35.8	30.0	25.0	21.0	17.6
4.0	7.0	64.7	62.6	57.2	50.0	42.5	35.7	29.8	24.9	21.0
4.0	8.0	75.1	72.7	66.4	58.1	49.4	41.4	34.6	29.0	24.3
4.0	10.0	96.2	93.2	85.1	74.4	63.3	53.1	44.3	37.1	30.4
4.0	12.0	117.5	113.8	104.0	90.9	77.3	64.8	54.2	45.3	36.4
4.0	16.0	160.0	155.0	141.6	123.8	105.3	88.3	73.7	61.7	48.6
4.0	20.0	200.0	193.7	177.0	154.7	131.6	110.3	92.2	77.1	60.7

w_1 and b_1 are non-rotation contact area dimensions, see Figure 7

MASTICORD™ FOR SLIDE BEARINGS
MAXIMUM LOAD V_{ar} (kips)

MASTICORD™ Thickness (t) = 3/4 inch (K_t = 325)

Dimensions (inches)		Angle (A) radians								
Width w_1	Length b_1	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08
4.5	3.0	28.1	27.2	24.9	21.7	18.5	15.5	12.9	10.8	9.1
4.5	3.5	33.6	32.5	29.7	26.0	22.1	18.5	15.5	13.0	10.6
4.5	4.0	39.2	38.0	34.7	30.3	25.8	21.6	18.1	15.1	12.1
4.5	4.5	44.9	43.5	39.8	34.8	29.6	24.8	20.7	17.3	13.7
4.5	5.0	50.7	49.1	44.9	39.3	33.4	28.0	23.4	19.6	15.2
4.5	6.0	62.6	60.6	55.4	48.4	41.2	34.5	28.8	24.1	18.2
4.5	7.0	74.6	72.3	66.0	57.7	49.1	41.2	34.4	28.8	21.3
4.5	8.0	86.8	84.1	76.8	67.2	57.1	47.9	40.0	33.0	24.3
4.5	10.0	111.6	108.1	98.8	86.3	73.4	61.6	51.4	41.3	30.4
4.5	12.0	135.0	130.8	119.5	104.4	88.8	74.5	62.2	49.5	36.4
4.5	16.0	180.0	174.3	159.3	139.3	118.4	99.3	82.9	66.0	48.6
4.5	20.0	225.0	217.9	199.1	174.1	148.0	124.1	103.7	82.5	60.7
5.0	3.0	31.6	30.6	27.9	24.4	20.8	17.4	14.5	12.2	9.1
5.0	3.5	37.8	36.6	33.5	29.2	24.9	20.9	17.4	14.4	10.6
5.0	4.0	44.2	42.8	39.1	34.2	29.1	24.4	20.4	16.5	12.1
5.0	4.5	50.7	49.1	44.9	39.3	33.4	28.0	23.4	18.6	13.7
5.0	5.0	57.4	55.6	50.8	44.4	37.8	31.7	26.4	20.6	15.2
5.0	6.0	70.9	68.7	62.8	54.9	46.7	39.1	32.7	24.8	18.2
5.0	7.0	84.8	82.1	75.0	65.6	55.8	46.8	39.1	28.9	21.3
5.0	8.0	98.9	95.8	87.5	76.5	65.0	54.6	45.6	33.0	24.3
5.0	10.0	125.0	121.1	110.6	96.7	82.2	69.0	57.5	41.3	30.4
5.0	12.0	150.0	145.3	132.7	116.1	98.7	82.8	69.0	49.5	36.4
5.0	16.0	200.0	193.7	177.0	154.7	131.6	110.3	92.1	66.0	48.6
5.0	20.0	250.0	242.1	221.2	193.4	164.5	137.9	115.1	82.5	60.7
6.0	3.0	38.6	37.3	34.1	29.8	25.4	21.3	17.3	12.4	9.1
6.0	3.5	46.3	44.9	41.0	35.9	30.5	25.6	20.1	14.4	10.6
6.0	4.0	54.4	52.6	48.1	42.1	35.8	30.0	23.0	16.5	12.1
6.0	4.5	62.6	60.6	55.4	48.4	41.2	34.5	25.9	18.6	13.7
6.0	5.0	70.9	68.7	62.8	54.9	46.7	39.1	28.8	20.6	15.2
6.0	6.0	88.1	85.4	78.0	68.2	58.0	48.6	34.5	24.8	18.2
6.0	7.0	105.0	101.7	92.9	81.2	69.1	57.9	40.3	28.9	21.3
6.0	8.0	120.0	116.2	106.2	92.8	78.9	66.2	46.0	33.0	24.3
6.0	10.0	150.0	145.3	132.7	116.1	98.7	82.7	57.5	41.3	30.4
6.0	12.0	180.0	174.3	159.3	139.3	118.4	99.2	69.0	49.5	36.4
6.0	16.0	240.0	232.4	212.4	185.7	157.9	132.3	92.1	66.0	48.6
6.0	20.0	300.0	290.6	265.5	232.1	197.4	165.4	115.1	82.5	60.7

w_1 and b_1 are non-rotation contact area dimensions, see Figure 7

MASTICORD™ FOR SLIDE BEARINGS
MAXIMUM LOAD V_{ar} (kips)

MASTICORD™ Thickness (t) = 3/4 inch (K_t = 325)

Dimensions (inches)		Angle (A) radians								
Width w_1	Length b_1	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08
8.0	3.0	52.7	51.1	46.7	40.8	34.7	24.8	17.3	12.4	9.1
8.0	3.5	63.7	61.7	56.4	49.3	41.9	28.9	20.1	14.4	10.6
8.0	4.0	75.1	72.7	66.4	58.1	49.3	33.1	23.0	16.5	12.1
8.0	4.5	86.8	84.1	76.8	67.2	55.5	37.2	25.9	18.6	13.7
8.0	5.0	98.9	95.8	87.5	76.5	61.6	41.3	28.8	20.6	15.2
8.0	6.0	120.0	116.2	106.2	92.8	74.0	49.6	34.5	24.8	18.2
8.0	7.0	140.0	135.6	123.9	108.3	86.3	57.9	40.3	28.9	21.3
8.0	8.0	160.0	155.0	141.6	123.8	98.6	66.2	46.0	33.0	24.3
8.0	10.0	200.0	193.7	177.0	154.7	123.3	82.7	57.5	41.3	30.4
8.0	12.0	240.0	232.4	212.4	185.7	147.9	99.2	69.0	49.5	36.4
8.0	16.0	320.0	309.9	283.2	247.6	197.3	132.3	92.1	66.0	48.6
8.0	20.0	400.0	387.4	354.0	309.5	246.6	165.4	115.1	82.5	60.7
10.0	3.0	67.1	65.0	59.4	51.9	37.0	24.8	17.3	12.4	9.1
10.0	3.5	81.3	78.8	72.0	62.9	43.2	28.9	20.1	14.4	10.6
10.0	4.0	96.2	93.2	85.1	74.4	49.3	33.1	23.0	16.5	12.1
10.0	4.5	111.6	108.1	98.8	86.3	55.5	37.2	25.9	18.6	13.7
10.0	5.0	125.0	121.1	110.6	96.7	61.6	41.3	28.8	20.6	15.2
10.0	6.0	150.0	145.3	132.7	116.0	74.0	49.6	34.5	24.8	18.2
10.0	7.0	175.0	169.5	154.9	135.4	86.3	57.9	40.3	28.9	21.3
10.0	8.0	200.0	193.7	177.0	154.7	98.6	66.2	46.0	33.0	24.3
10.0	10.0	250.0	242.1	221.2	193.4	123.3	82.7	57.5	41.3	30.4
10.0	12.0	300.0	290.6	265.5	232.0	147.9	99.2	69.0	49.5	36.4
10.0	16.0	400.0	387.4	354.0	309.4	197.3	132.3	92.1	66.0	48.6
10.0	20.0	500.0	484.3	442.5	386.7	246.6	165.4	115.1	82.5	60.7
12.0	3.0	81.5	79.0	72.1	58.0	37.0	24.8	17.3	12.4	9.1
12.0	3.5	99.1	96.0	87.7	67.7	43.2	28.9	20.1	14.4	10.6
12.0	4.0	117.5	113.8	104.0	77.3	49.3	33.1	23.0	16.5	12.1
12.0	4.5	135.0	130.8	119.5	87.0	55.5	37.2	25.9	18.6	13.7
12.0	5.0	150.0	145.3	132.7	96.7	61.6	41.3	28.8	20.6	15.2
12.0	6.0	180.0	174.3	159.3	116.0	74.0	49.6	34.5	24.8	18.2
12.0	7.0	210.0	203.4	185.8	135.4	86.3	57.9	40.3	28.9	21.3
12.0	8.0	240.0	232.4	212.4	154.7	98.6	66.2	46.0	33.0	24.3
12.0	10.0	300.0	290.6	265.5	193.4	123.3	82.7	57.5	41.3	30.4
12.0	12.0	360.0	348.7	318.6	232.0	147.9	99.2	69.0	49.5	36.4
12.0	16.0	480.0	464.9	424.8	309.4	197.3	132.3	92.1	66.0	48.6
12.0	20.0	600.0	581.1	531.0	386.7	246.6	165.4	115.1	82.5	60.7

w_1 and b_1 are non-rotation contact area dimensions, see Figure 7

MASTICORD™ FOR SLIDE BEARINGS
MAXIMUM LOAD V_{ar} (kips)

MASTICORD™ Thickness (t) = 1 inch (K_t = 275)

Dimensions (inches)		Angle (A) radians								
Width w_1	Length b_1	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08
3.0	3.0	16.9	16.4	15.2	13.5	11.7	10.0	8.5	7.2	6.1
3.0	3.5	20.0	19.4	18.0	16.0	13.9	11.8	10.0	8.5	7.2
3.0	4.0	23.1	22.5	20.8	18.5	16.0	13.7	11.6	9.8	8.4
3.0	4.5	26.2	25.5	23.6	21.0	18.2	15.5	13.2	11.2	9.5
3.0	5.0	29.4	28.6	26.5	23.6	20.4	17.4	14.8	12.5	10.7
3.0	6.0	35.8	34.8	32.3	28.7	24.9	21.2	18.0	15.3	13.0
3.0	7.0	42.3	41.1	38.1	33.9	29.3	25.0	21.2	18.0	15.3
3.0	8.0	48.7	47.4	43.9	39.1	33.8	28.9	24.5	20.8	17.7
3.0	10.0	61.8	60.1	55.7	49.5	42.9	36.6	31.1	26.3	22.4
3.0	12.0	74.9	72.9	67.5	60.1	52.0	44.4	37.6	31.9	27.1
3.0	16.0	101.3	98.6	91.2	81.2	70.3	60.0	50.9	43.1	36.7
3.0	20.0	127.7	124.3	115.1	102.4	88.7	75.7	64.2	54.4	46.3
3.5	3.0	20.0	19.4	18.0	16.0	13.9	11.8	10.0	8.5	7.2
3.5	3.5	23.7	23.0	21.3	19.0	16.4	14.0	11.9	10.1	8.6
3.5	4.0	27.4	26.7	24.7	22.0	19.0	16.2	13.8	11.7	9.9
3.5	4.5	31.2	30.4	28.1	25.0	21.7	18.5	15.7	13.3	11.3
3.5	5.0	35.0	34.1	31.6	28.1	24.3	20.8	17.6	14.9	12.7
3.5	6.0	42.8	41.6	38.5	34.3	29.7	25.4	21.5	18.2	15.5
3.5	7.0	50.6	49.3	45.6	40.6	35.1	30.0	25.4	21.6	18.3
3.5	8.0	58.5	56.9	52.7	46.9	40.6	34.7	29.4	24.9	21.2
3.5	10.0	74.4	72.4	67.0	59.6	51.7	44.1	37.4	31.7	27.0
3.5	12.0	90.4	88.0	81.4	72.5	62.8	53.6	45.4	38.5	32.7
3.5	16.0	122.6	119.3	110.5	98.3	85.1	72.7	61.6	52.2	44.4
3.5	20.0	155.0	150.8	139.6	124.2	107.6	91.8	77.9	66.0	56.1
4.0	3.0	23.1	22.5	20.8	18.5	16.0	13.7	11.6	9.8	8.4
4.0	3.5	27.4	26.7	24.7	22.0	19.0	16.2	13.8	11.7	9.9
4.0	4.0	31.8	31.0	28.7	25.5	22.1	18.9	16.0	13.6	11.5
4.0	4.5	36.3	35.3	32.7	29.1	25.2	21.5	18.2	15.5	13.1
4.0	5.0	40.8	39.7	36.8	32.7	28.3	24.2	20.5	17.4	14.8
4.0	6.0	49.9	48.6	45.0	40.0	34.7	29.6	25.1	21.3	18.1
4.0	7.0	59.2	57.6	53.3	47.5	41.1	35.1	29.8	25.2	21.5
4.0	8.0	68.6	66.7	61.8	55.0	47.6	40.6	34.4	29.2	24.8
4.0	10.0	87.4	85.1	78.8	70.1	60.7	51.8	43.9	37.2	31.7
4.0	12.0	106.5	103.6	95.9	85.4	74.0	63.1	53.5	45.4	38.6
4.0	16.0	144.9	141.1	130.6	116.2	100.7	85.9	72.8	61.7	52.5
4.0	20.0	183.6	178.7	165.4	147.2	127.5	108.8	92.3	78.2	66.5

w_1 and b_1 are non-rotation contact area dimensions, see Figure 7

MASTICORD™ FOR SLIDE BEARINGS
MAXIMUM LOAD V_{ar} (kips)

MASTICORD™ Thickness (t) = 1 inch (K_t = 275)

Dimensions (inches)		Angle (A) radians								
Width w_1	Length b_1	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08
4.5	3.0	26.2	25.5	23.6	21.0	18.2	15.5	13.2	11.2	9.5
4.5	3.5	31.2	30.4	28.1	25.0	21.7	18.5	15.7	13.3	11.3
4.5	4.0	36.3	35.3	32.7	29.1	25.2	21.5	18.2	15.5	13.1
4.5	4.5	41.4	40.3	37.3	33.2	28.8	24.6	20.8	17.7	15.0
4.5	5.0	46.7	45.4	42.0	37.4	32.4	27.7	23.4	19.9	16.9
4.5	6.0	57.2	55.7	51.6	45.9	39.8	33.9	28.8	24.4	20.7
4.5	7.0	68.0	66.2	61.3	54.5	47.2	40.3	34.2	29.0	24.6
4.5	8.0	78.9	76.8	71.1	63.2	54.8	46.7	39.6	33.6	28.6
4.5	10.0	100.9	98.2	90.9	80.9	70.1	59.8	50.7	43.0	36.6
4.5	12.0	123.2	119.9	111.0	98.8	85.6	73.0	61.9	52.5	44.6
4.5	16.0	168.2	163.7	151.5	134.8	116.8	99.7	84.5	71.7	60.9
4.5	20.0	213.6	207.9	192.4	171.2	148.3	126.6	107.3	91.0	77.4
5.0	3.0	29.4	28.6	26.5	23.6	20.4	17.4	14.8	12.5	10.7
5.0	3.5	35.0	34.1	31.6	28.1	24.3	20.8	17.6	14.9	12.7
5.0	4.0	40.8	39.7	36.8	32.7	28.3	24.2	20.5	17.4	14.8
5.0	4.5	46.7	45.4	42.0	37.4	32.4	27.7	23.4	19.9	16.9
5.0	5.0	52.6	51.2	47.4	42.2	36.5	31.2	26.4	22.4	19.1
5.0	6.0	64.7	63.0	58.3	51.9	44.9	38.3	32.5	27.6	23.4
5.0	7.0	77.0	74.9	69.4	61.7	53.5	45.6	38.7	32.8	27.9
5.0	8.0	89.5	87.1	80.6	71.7	62.1	53.0	45.0	38.1	32.4
5.0	10.0	114.8	111.7	103.4	92.0	79.7	68.0	57.7	48.9	41.6
5.0	12.0	140.4	136.7	126.5	112.6	97.5	83.2	70.6	59.8	50.9
5.0	16.0	192.4	187.2	173.3	154.2	133.6	114.0	96.7	81.9	69.7
5.0	20.0	244.8	238.3	220.6	196.3	170.0	145.1	123.0	104.3	88.7
6.0	3.0	35.8	34.8	32.3	28.7	24.9	21.2	18.0	15.3	13.0
6.0	3.5	42.8	41.6	38.5	34.3	29.7	25.4	21.5	18.2	15.5
6.0	4.0	49.9	48.6	45.0	40.0	34.7	29.6	25.1	21.3	18.1
6.0	4.5	57.2	55.7	51.6	45.9	39.8	33.9	28.8	24.4	20.3
6.0	5.0	64.7	63.0	58.3	51.9	44.9	38.3	32.5	27.6	22.6
6.0	6.0	79.9	77.7	72.0	64.0	55.5	47.3	40.1	34.0	27.1
6.0	7.0	95.4	92.9	86.0	76.5	66.3	56.5	47.9	40.6	31.6
6.0	8.0	111.2	108.2	100.2	89.2	77.2	65.9	55.9	47.4	36.2
6.0	10.0	143.5	139.6	129.2	115.0	99.6	85.0	72.1	60.8	45.2
6.0	12.0	176.3	171.6	158.8	141.3	122.4	104.5	88.6	72.9	54.2
6.0	16.0	240.0	233.6	216.2	192.4	166.7	142.2	120.6	97.2	72.3
6.0	20.0	300.0	292.0	270.3	240.5	208.3	177.8	150.8	121.5	90.4

w_1 and b_1 are non-rotation contact area dimensions, see Figure 7

MASTICORD™ FOR SLIDE BEARINGS
MAXIMUM LOAD V_{ar} (kips)

MASTICORD™ Thickness (t) = 1 inch (K_t = 275)

Dimensions (inches)		Angle (A) radians								
Width w_1	Length b_1	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08
8.0	3.0	48.7	47.4	43.9	39.1	33.8	28.9	24.5	18.2	13.6
8.0	3.5	58.5	56.9	52.7	46.9	40.6	34.7	29.3	21.3	15.8
8.0	4.0	68.6	66.7	61.8	55.0	47.6	40.6	33.5	24.3	18.1
8.0	4.5	78.9	76.8	71.1	63.2	54.8	46.7	37.6	27.3	20.3
8.0	5.0	89.5	87.1	80.6	71.7	62.1	53.0	41.8	30.4	22.6
8.0	6.0	111.2	108.2	100.2	89.2	77.2	65.9	50.2	36.5	27.1
8.0	7.0	133.7	130.1	120.4	107.2	92.8	79.2	58.6	42.5	31.6
8.0	8.0	156.7	152.5	141.2	125.6	108.8	92.9	66.9	48.6	36.2
8.0	10.0	200.0	194.6	180.2	160.3	138.9	118.4	83.7	60.8	45.2
8.0	12.0	240.0	233.6	216.2	192.4	166.7	142.1	100.4	72.9	54.2
8.0	16.0	320.0	311.4	288.3	256.5	222.2	189.5	133.8	97.2	72.3
8.0	20.0	400.0	389.3	360.4	320.6	277.8	236.8	167.3	121.5	90.4
10.0	3.0	61.8	60.1	55.7	49.5	42.9	35.5	25.1	18.2	13.6
10.0	3.5	74.4	72.4	67.0	59.6	51.7	41.4	29.3	21.3	15.8
10.0	4.0	87.4	85.1	78.8	70.1	60.7	47.4	33.5	24.3	18.1
10.0	4.5	100.9	98.2	90.9	80.9	70.1	53.3	37.6	27.3	20.3
10.0	5.0	114.8	111.7	103.4	92.0	79.7	59.2	41.8	30.4	22.6
10.0	6.0	143.5	139.6	129.2	115.0	99.6	71.1	50.2	36.5	27.1
10.0	7.0	173.3	168.6	156.1	138.9	120.3	82.9	58.6	42.5	31.6
10.0	8.0	200.0	194.6	180.2	160.3	138.8	94.7	66.9	48.6	36.2
10.0	10.0	250.0	243.3	225.2	200.4	173.5	118.4	83.7	60.8	45.2
10.0	12.0	300.0	292.0	270.3	240.5	208.2	142.1	100.4	72.9	54.2
10.0	16.0	400.0	389.3	360.4	320.6	277.6	189.5	133.8	97.2	72.3
10.0	20.0	500.0	486.6	450.5	400.8	347.0	236.8	167.3	121.5	90.4
12.0	3.0	74.9	72.9	67.5	60.1	52.0	35.5	25.1	18.2	13.6
12.0	3.5	90.4	88.0	81.4	72.5	60.7	41.4	29.3	21.3	15.8
12.0	4.0	106.5	103.6	95.9	85.4	69.4	47.4	33.5	24.3	18.1
12.0	4.5	123.2	119.9	111.0	98.8	78.1	53.3	37.6	27.3	20.3
12.0	5.0	140.4	136.7	126.5	112.6	86.8	59.2	41.8	30.4	22.6
12.0	6.0	176.3	171.6	158.8	141.3	104.1	71.1	50.2	36.5	27.1
12.0	7.0	210.0	204.4	189.2	168.3	121.5	82.9	58.6	42.5	31.6
12.0	8.0	240.0	233.6	216.2	192.4	138.8	94.7	66.9	48.6	36.2
12.0	10.0	300.0	292.0	270.3	240.5	173.5	118.4	83.7	60.8	45.2
12.0	12.0	360.0	350.4	324.3	288.6	208.2	142.1	100.4	72.9	54.2
12.0	16.0	480.0	467.2	432.4	384.8	277.6	189.5	133.8	97.2	72.3
12.0	20.0	600.0	583.9	540.5	481.0	347.0	236.8	167.3	121.5	90.4

w_1 and b_1 are non-rotation contact area dimensions, see Figure 7

HOW TO SPECIFY **MASTICORD™**

A. MATERIAL

Bearing pads shall be a homogeneous blend of ozone-resistant rubber elastomer and high strength random synthetic fiber cords cured together to form a durable material with uniform behavior in all directions, suitable to support structural bearing loads. The **MASTICORD™** bearing pads, as manufactured by **JVI,** Inc. of Skokie, Illinois, shall be of the size and thickness specified or shown by the contract drawings.

B. MECHANICAL REQUIREMENTS

The **MASTICORD™** bearing pads shall conform to the specified ASTM and other material test requirements in all directions perpendicular to the pad's thickness. The manufacturer shall provide a quality control test report certifying the bearing pad meets the specified test requirements.

1.	Hardness (Shore A)	75 (±5)
2.	Compression	
	a. Minimum ultimate	8,000 psi
	b. Initial minimum cracking strain*	40%
3.	Shear Modulus (G)	
	a. At 70°F for a uniform compressive stress of 1,000 psi and a shear strain of 50% ($\frac{d_h}{t} \times 100$) where both bearing surfaces contact smooth concrete.	170 psi (±50 psi)
	b. G constant in all directions parallel to the bearing plane.	
4.	Tensile Strength* (ASTM D 412, Die C)	1,000 psi
5.	Tear Strength* (ASTM D 624, Die B)	400 lb/in min.
6.	Heat Aging (ASTM D 573)	
	a. Change in tensile strength	±25% max.
	b. Change in elongation	±25% max.
	c. Change in hardness	10 point max.
7.	Ozone Resistance	
	a. After 50 hours at 100°F in an ozone concentration of 80 pphm-tear strength.	300 lb/in min.
8.	Oil Swell (increase in vol.) (ASTM D 471)	120% max.

*10% Variation will be allowed.

C. FABRICATION REQUIREMENTS

1. The plan dimensions of the bearing pad shall be within a tolerance of 3 percent or ±1/8 inches, whichever is greater.

2. The thickness of the bearing pad shall be within a tolerance of 15 percent or ±1/16 inches, whichever is greater.

D. INSTALLATION

The **MASTICORD™** bearing pad shall be erected and located within ±3/8 inch of its planned position as shown by the plans or approved shop drawings.

MASTICORD™ SLIDE BEARINGS

For conditions where it is necessary to accommodate lateral movement, such as at expansion joints, Teflon® slide bearings are commonly used. The slide bearing system requires an upper and a lower element. The upper element should be fastened to the bottom side of the upper structural member having a smooth exterior surface for sliding action. Polished stainless steel is commonly used for the upper element. The lower element contains the Teflon® surface. The lower element does not require fastening to the bottom element, however, some designers prefer to have a mechanical fastening system. The Teflon® should be bonded to a **MASTICORD™** pad in order to control non-uniform loading. See Figure 15.

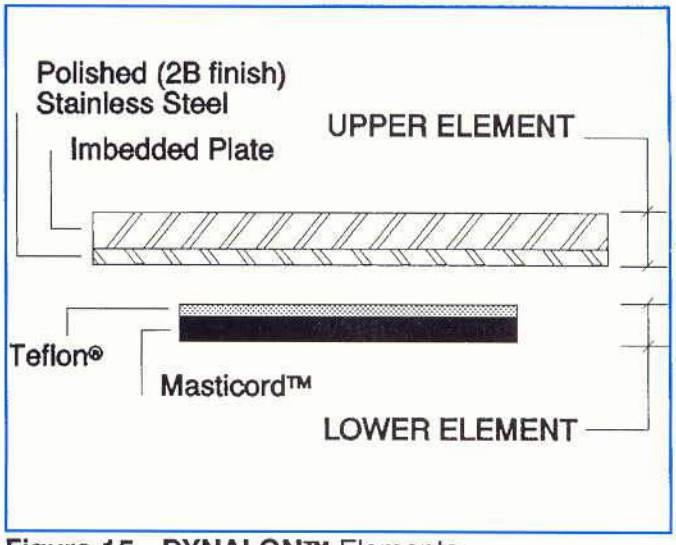


Figure 15 - **DYNALON™** Elements

The most important consideration in designing a slide bearing is to keep the upper element larger than the lower element on all sides, for sizing see the following section, *General Recommendations for **Dynalon™** Slide Bearings*. There are several reasons for this oversizing:

- Allows for misalignment of the two elements.
- Ensures the lower element will always be 100 percent covered so foreign particles cannot collect and inhibit movement on the Teflon® surface.
- Eliminates cutting or gouging of the Teflon® when it comes in contact with an edge of the stainless steel upper element.

The upper element should never be Teflon®. Although a Teflon® upper and lower surface side nicely, cold flow or plowing of the Teflon® is a concern when the smaller lower element compresses into the larger upper element, as shown in Figure 16.

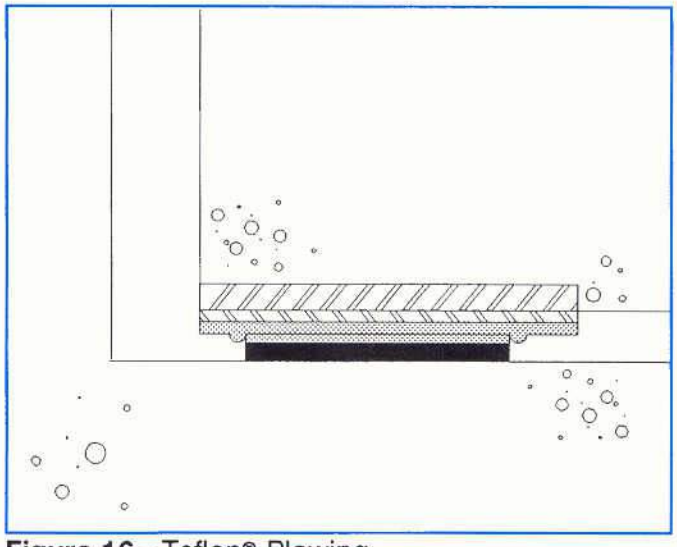


Figure 16 - Teflon® Plowing

An upper Teflon® element and a lower stainless steel element is not an effective design since the hard stainless element will cut into or gouge the Teflon® and prohibit movement, Figure 17.

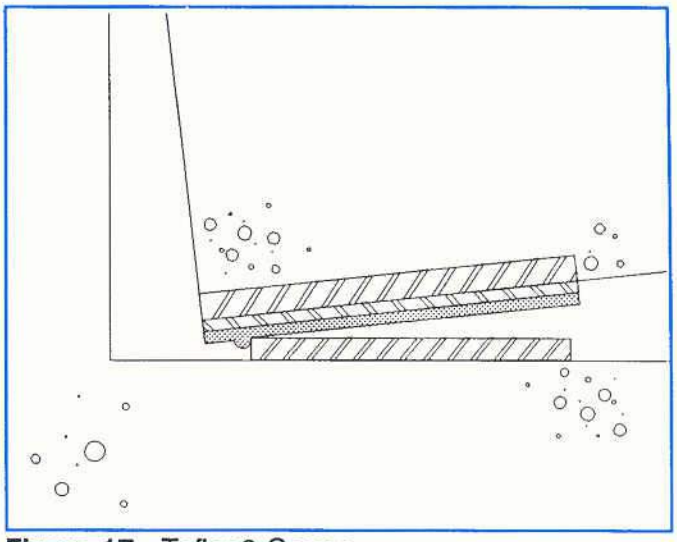


Figure 17 - Teflon® Gouge

TREATMENT OF NON-UNIFORM LOADING (NUL)

To perform most effectively, the Teflon® coating should be flat across its surface and both the upper and lower elements should function in the same plane. Since most all bearing instances have non-uniform loading (NUL), consideration must be given to keeping the elements functioning in the same plane. The addition of an elastomer under the Teflon® surface promotes full contact of the sliding surface by compressing in the presence of NUL, Figure 18.

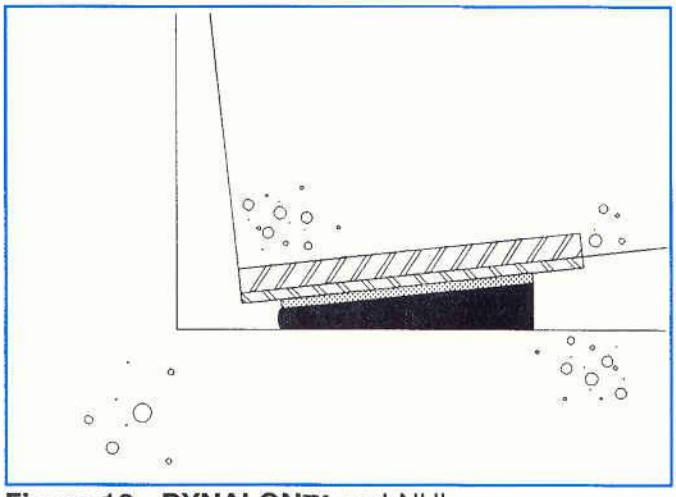


Figure 18 - **DYNALON™** and NUL

The choice of **MASTICORD™** for the elastomer is logical since it has several advantages over unreinforced elastomers. The compressive capacity of **MASTICORD™** is much greater than unreinforced elastomers and it is more compatible with the compressive properties of Teflon®. The combination of materials work well together, upon first load **MASTICORD™** will accommodate approximately 10 to 20 percent lateral deformation before sliding occurs depending upon the amount of compressive load. Sliding will occur at a static friction coefficient of 0.07 on average and be maintained with a sliding coefficient of friction of 0.05.

GENERAL RECOMMENDATIONS FOR **DYNALON™** SLIDE BEARINGS

LOWER ELEMENT

MASTICORD™:

Minimum thickness

• Non-beam members spanning less than 60 feet	3/8"
• Non-beam members spanning more than 60 feet	3/8" to 1/2"
• Beams spanning less than 40 feet	1/2"
• Beams spanning more than 40 feet	5/8" to 3/4"

MASTICORD™ size

- Design using typical **MASTICORD™** compression equations, limit the allowable compressive load in kips without rotation to *2.5bw*.

Teflon®:

• 25% glass filled, reinforced TFE, 3/32-inch minimum.		
• Tensile Strength	ASTM D 1457	2,000 psi
• Tensile Elongation	ASTM D 1457	150%
• Hardness, Durometer, Shore D	ASTM D 2240	57

Epoxy:

• Tensile Strength	ASTM C 538	6,600 psi
• Compressive (Room Temperature)	ASTM D 695	3,200 psi

UPPER ELEMENT

Slide Plate:

- Stainless steel SS-304, 10 gage minimum with 1 side No. 2B Finish, also referred to as mirror finish.
- Dimension of plate should be larger than lower element in all directions.
  - Sides *perpendicular* to sliding direction should be 1/2 inch larger than lower element on each side, Figure 19.

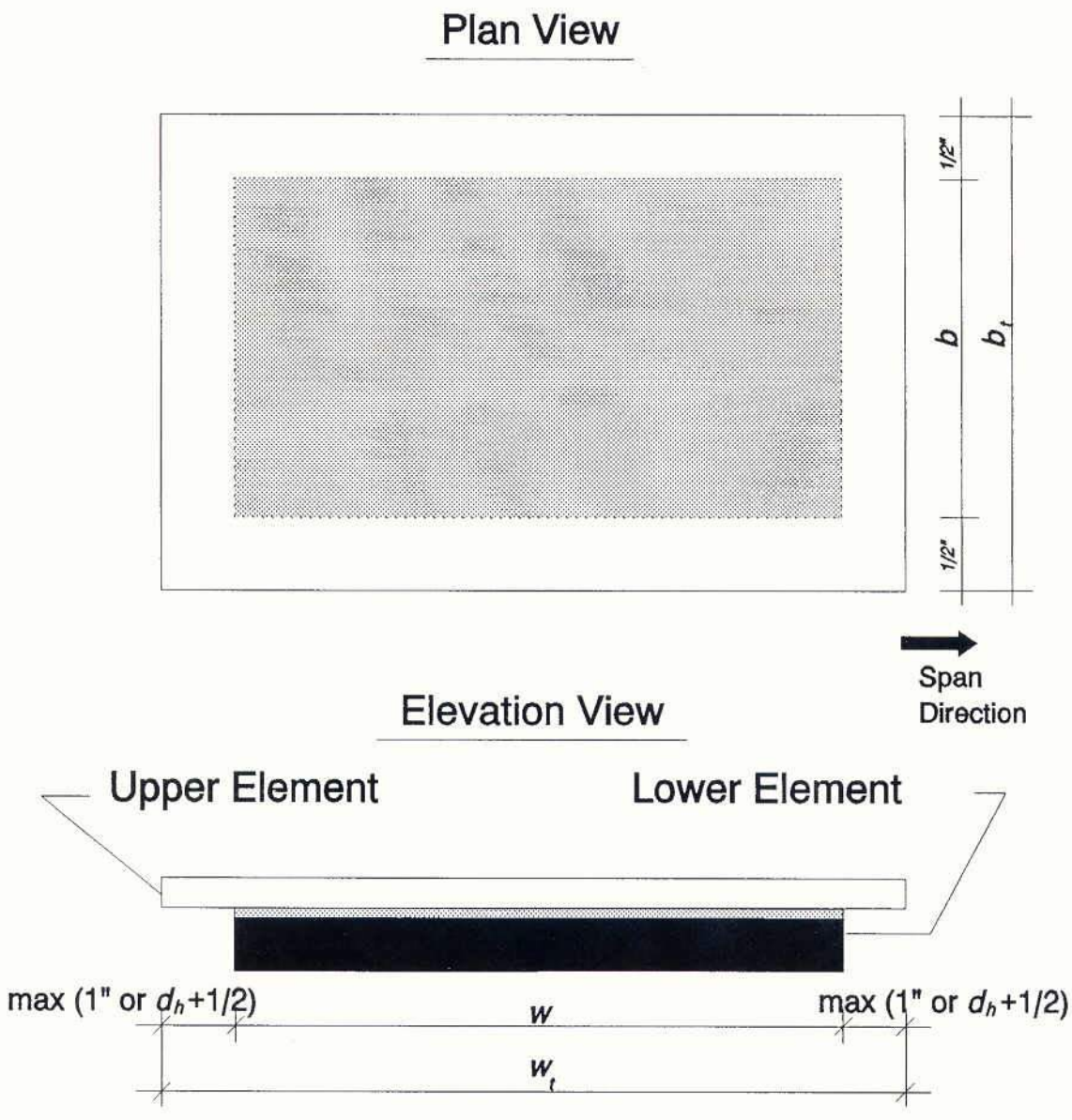
$$b_t = b + 1$$

  - Sides *parallel* to sliding direction should be the greater of 1 inch larger than lower element on each side OR the amount of expected movement plus 1/2 inch larger than lower element on each side, Figure 19.

$$w_t = \text{maximum of } w + 2 \text{ or } w + d_h + 1$$

- Tack weld stainless plate of upper bearing element to imbedded plate of top structural element.

Dynalon™ Dimensions

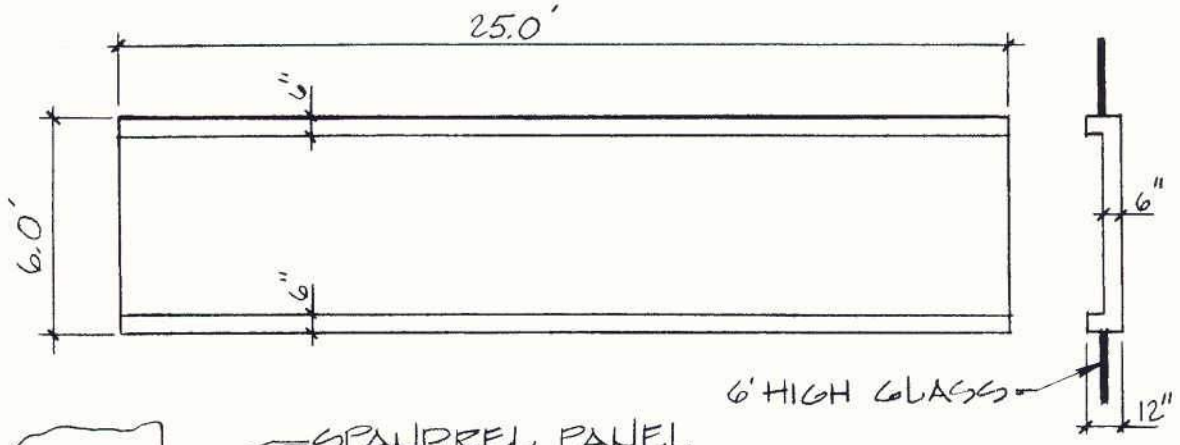


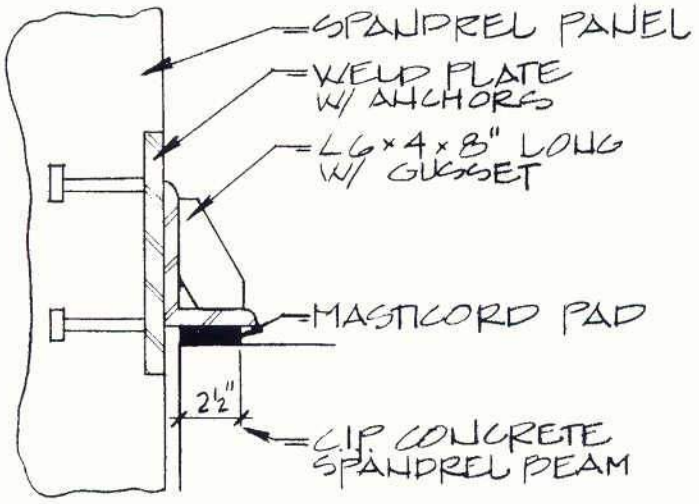
Note: All sides of upper element must overhang lower element.

Figure 19 - **DYNALON™** Dimensions

EXAMPLE 1

DESIGN THE BEARING PAD FOR AN ARCHITECTURAL PRECAST CONCRETE SPANDREL PANEL. THE PANEL VERTICAL SUPPORT CONNECTIONS ARE LOCATED AT 5 FT FROM PANEL ENDS AND ARE INDEPENDENT OF THE LATERAL CONNECTIONS.





PANEL WT = 13,125 LBS (@ 150 psf)

GLASS WT = 1,200 LBS (@ 8 psf)

TOTAL = 14,325 LBS

PAGE 1-1

EXAMPLE 1

SELECT PAD DIMENSIONS

USE A UNIFORM BEARING STRESS IN THE RANGE OF 800 TO 1000 psi (WORKING LOAD) TO SATISFY PLAIN CONCRETE BEARING.

$$wb = \frac{14{,}325 \text{ lbs}}{2(800 \text{ psi})} = 8.95 \text{ in}^2$$

USE $w = 2.5''$ $\quad b = \frac{8.95 \text{ in}^2}{2.5 \text{ in}} = 3.58''$

SELECT $b = 3.5''$

LOAD AREA = AREA OF PAD $\therefore$ $w_1 = 2.5''$, $b_1 = 3.5''$

SELECT MINIMUM PAD THICKNESS

DETERMINE VOLUME CHANGE MOVEMENTS DUE TO 65°F SHORTENING AND CONCRETE SHRINKAGE OF 0.0004 in/in

$$\text{SHORTENING} = 65°F(6 \times 10^{-6}) + 0.0004 = 0.00079 \text{ in}$$

$$dh = (12.5' - 5')(.00079 \text{ in/in})(12 \text{ in/ft}) = 0.0711 \text{ in. per conn.}$$

$$\text{MINIMUM THICKNESS} = \frac{dh}{0.75} = \frac{0.0711}{0.75} = 0.095 \text{ in}$$

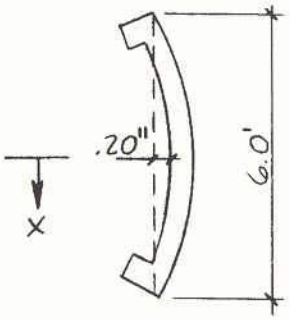
SELECT $\frac{1}{4}$ in THICKNESS AS A MINIMUM

USE $t = 0.25''$

EXAMPLE 1

DETERMINE ANGLE OF ROTATION

PER PCI DESIGN HANDBOOK, PART 8 - TOLERANCES, 3RD EDITION,
CHECK TOLERANCE ON BOWING OF PANEL
MAXIMUM BOWING TOLERANCE IS $\frac{L}{360} = \frac{6' \times 12''/1}{360} = 0.20''$



FIND APPROXIMATE ROTATION AT END USING EQUATION 12.

$$A = \frac{4D}{L}$$

SINCE ROTATION AT 20" FROM END IS DESIRED, FIND EQUATION 12 IN TERMS OF DISTANCE FROM CENTER OF PANEL, x

$$A = \frac{8Dx}{L^2} \quad \text{(FROM EQUATION OF PARABOLA)}$$

$$x = \frac{6' \times 12''/1}{2} - 20'' = 16'' \text{ FROM CENTER OF PANEL TO CONNECTION}$$

$$A = \frac{8(0.20'')(16'')}{(72)^2} = 0.01 \text{ RAD.}$$

PAGE 1-3

EXAMPLE 1

SOLUTION BY EQUATIONS

DETERMINE ALLOWABLE COMPRESSIVE LOAD WITHOUT ROTATION.

(EQ. 1) $SF = \frac{w_1 b_1}{2(w_1+b_1)t} = \frac{(2.5")(3.5")}{2(2.5"+3.5")(.25")} = 2.92$

(EQ. 2) $V_{nr} = \frac{(.6SF+2)\, e_{max}^{1.8} b_1 w_1}{1000} =$

$$V_{nr} = \frac{(.6[2.92]+2)\,40^{1.8}(3.5")(2.5")}{1000} = V_{nr} = 25.1^K$$

CALCULATE w_2, BEARING LENGTH W/ ROTATION

(EQ. 6) $w_2 = \frac{e_c t}{100\tan(A)} \leq w_1$ WHERE $e_c = e_{max} = 40\%$

$$w_2 = \frac{40(.25)}{100\tan(.01)} = 10" \text{ USE } w_2 = w_1 = 2.5"$$

CHECK MAXIMUM COMPRESSIVE STRESS

(EQ 3) $S_{nr} = \frac{1000 V_{nr}}{b_1 w_2} = \frac{1000(25.1^K)}{(3.5")(2.5")} = 2869 \text{ psi} < 8000 \text{ psi}$ OK

CALCULATE REDUCTION FACTOR

(EQ. 4) $R = \frac{1}{(K_t A^2+1)} = \frac{1}{(2500(.01)^2+1)} = 0.80$

CALCULATE COMPRESSIVE LOAD W/ ANGLE OF ROTATION

(EQ. 5) $V_{ar} = V_{nr} R = 25.1^K(0.80) = 20.1^K$

PAGE 1-4

EXAMPLE 1

COMPARE TO THE APPLIED COMPRESSIVE LOAD

$V_{ap} = 14.3^K$ (SEE PAGE 1-1)

$V_{ar} > V_{ap}$ ∴ PAD SIZE OKAY

USE $2\frac{1}{2}" \times 3\frac{1}{2}" \times \frac{1}{4}"$ MASTICORD

SOLUTION BY CURVES

USE FIGURE 11, PAGE 18 TO FIND S_{nr}

$e_{max} = 40\%$

ENTER GRAPH WITH SF = 2.92 (FROM PAGE 1-4)

$S_{nr} = 2{,}900\ psi$

CALCULATE V_{nr} FROM EQ. 3

$$V_{nr} = \frac{S_{nr}(b_1)(w_2)}{1000} = \frac{2900\ psi\,(3.5")(2.5")}{1000}$$

$V_{nr} = 25.4^K$

USE FIGURE 12, PAGE 19 TO FIND R

ENTER GRAPH WITH $t = \frac{1}{4}"$

$A = 0.01$ RAD.

$R = 0.8$

CALCULATE V_{ar} FROM EQ. 5

$V_{ar} = V_{nr}R = 25.4^K(0.8) = 20.3^K$

EXAMPLE 1

DETERMINE MAXIMUM ALLOWABLE SHEAR LOAD

SOLUTION BY EQUATIONS

(EQ. 9) $N = 0.012 S_{ap} \sqrt{e_s}\, b_1 w_2$

USE $e_s = 75\%$ FOR DESIGN

(EQ. 8) $S_{ap} = \frac{V_{ap}}{b_1 w_2} \times 1000 = \frac{14.3^{K} \times 1000}{(3.5")(2.5")}$

$S_{ap} = 1{,}634$ psi

$N = 0.012(1634 psi)(\sqrt{75})(2.5")(3.5")$

$N = 1488$ lbs.

SOLUTION BY CURVES

USE FIGURE 13 ON PAGE 19

ENTER CURVE WITH $S_{ap} = 1{,}634$ psi

AND $e_s = 75\%$

READ $S_s = 170$ psi

$N = S_s(b_1)(w_2) = 170 psi(3.5")(2.5")$

$N = 1{,}488$ lbs.

DETERMINE ACTUAL SHEAR FORCE DUE TO MOVEMENT dh

$dh = 0.0711"$

(EQ. 7) $e_s = \frac{0.0711"}{.25"} \times 100\% = 28.4\%$

(EQ. 9) $N = 0.012(1634 psi)(\sqrt{28.4})(2.5")(3.5")$

$N = 914$ lbs

PAGE 1-6

EXAMPLE 2

DESIGN THE BEARING PAD AT THE END SUPPORT FOR A PCI 8DT24 (128-D1), THE NORMAL WEIGHT DOUBLE-TEE IS A HEATED BUILDING ROOF MEMBER IN THE CHICAGO AREA WHICH BEARS ON A 6" BEAM LEDGE WITH $f'_c = 4{,}000$ psi. USE THE PCI DESIGN HANDBOOK, 3RD ED. FOR REFERENCE.

TEE WT = 52 psf
SDL = 12 psf
LL = 30 psf

V_{ap} @ ERECTION $= \frac{68'(8')(52\text{psf})}{4} = 7{,}072$ lbs

V_{ap} @ FINAL $= \frac{68'(8')(52+12+30\text{psf})}{4} = 12{,}784$ lbs

SELECT TRIAL PAD DIMENSIONS

TEE LEG WIDTH = $3\frac{3}{4}$" $\therefore$ USE $b = 3.5$"
LEDGE WIDTH = 6" $\therefore W = 5.0$", HOWEVER CONSIDER THAT THE BEARING COULD BE LESS DUE TO ERECTION TOLERANCES $\therefore$ USE $W_1 = 4.5$"

CONSIDER FULL BEARING OF PAD WITHOUT ROTATION

$W_1 = 4.5$"
$b_1 = b = 3.5$"

PAGE 2-1

EXAMPLE 2

SELECT PAD THICKNESS

DOUBLE-TEE SHORTENING STRAIN = 0.000702 in/in (PER PCI TABLE 3.3.6)

$$dh = \frac{68'}{2}(12''/')(.000702 in/in) = 0.29''$$

$$\text{MIN } t = \frac{dh}{75\%} = \frac{.29(100)}{75} = 0.39''$$

TRY $t = \frac{1}{2}''$

DETERMINE ANGLE OF ROTATION BY PARABOLIC APPROXIMATION, SEE PAGE 21 FOR DISCUSSION.

USE LOAD TABLE IN PCI FOR 8DT24 CAMBERS (D)

AT ERECTION $D = 1.9''$

AT FINAL $D = 0.8''$

(EQ. 12) $\Delta = \frac{4D}{L}$

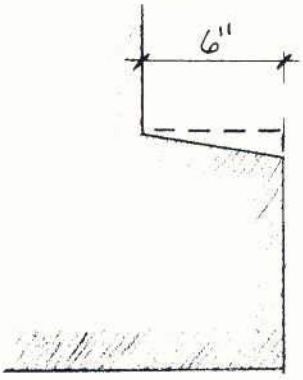
AT ERECTION $\Delta_E = \frac{4(1.9'')}{(68')(12''/')} = 0.01$ RAD.

AT FINAL $\Delta_F = \frac{4(0.8'')}{(68')(12''/')} = 0.00$ RAD (NEGLIGIBLE)

PAGE 2-2

EXAMPLE 2

CONSIDER BEARING LEDGE CONSTRUCTION TOLERANCE AND ASSUME TEE END BEARING NOT SKEWED.



$\pm \frac{1}{8}$" PER PCI TABLE 8.2.1

(EQ. 13) $A_T = \tan^{-1}\left(\frac{.125"}{6"}\right) = 0.02$ RAD.

TOTAL ANGLE OF ROTATION

$A_{TOT} = A_{E \text{ OR } F} + A_T$

$A_{E_{TOT}} = 0.01 \text{ RAD.} + 0.02 \text{ RAD.} = 0.03 \text{ RAD.}$

$A_{F_{TOT}} = 0.00 \text{ RAD.} + 0.02 \text{ RAD.} = 0.02 \text{ RAD.}$

SOLUTION BY EQUATIONS (THIS EXAMPLE SHOWS FINAL LOAD CONDITION ONLY)

FIND SHAPE FACTOR

(EQ. 1) $SF = \frac{b_1 w_1}{2t(b_1 + w_1)} = \frac{(3.5")(4.5")}{2(.5")(3.5" + 4.5")} = 1.97$

CALCULATE V_{nr}, MAXIMUM ALLOWABLE LOAD WITHOUT ROTATION

(EQ. 2) $V_{nr} = \frac{(.6SF + 2)\, e_{max}^{1.8}\, b_1 w_1}{1000}$ USE $e_{max} = 40\%$ FOR DESIGN

$V_{nr} = \frac{(.6[1.97] + 2)(40^{1.8})(3.5")(4.5")}{1000}$

$V_{nr} = 38.3^K$

EXAMPLE 2

CALCULATE w_2, BEARING LENGTH WITH ROTATION

$$w_2 = \frac{e_c t}{100 \tan A} \leq w_1 \quad \text{USE } e_c = e_{max} = 40\% \text{ FOR DESIGN}$$

$$w_2 = \frac{40(.5)}{100 \tan(.02)} = 10" \quad \text{USE } w_2 = w_1 = 4.5"$$

CHECK MAXIMUM COMPRESSIVE STRESS

(EQ. 3) $$\sigma_{nr} = \frac{1000 V_{nr}}{b_1 w_2} = \frac{1000(38.3^K)}{(3.5")(4.5")}$$

$$\sigma_{nr} = 2{,}432 \text{ psi} < 3{,}000 \text{ psi} \quad \underline{OK}$$

CALCULATE REDUCTION FACTOR, R

(EQ. 4) $$R = \frac{1}{(K_t A^2 + 1)} \quad \text{WHERE } K_t = 500 \text{ FOR } \tfrac{1}{2}" \text{ PADS}$$

$$R = \frac{1}{(500(.02)^2 + 1)} = 0.83$$

CALCULATE MAXIMUM ALLOWABLE LOAD WITH ROTATION

(EQ. 5) $$V_{ar} = V_{nr} R = 38.3^K (0.83) = 31.8^K$$

COMPARE V_{ar} TO APPLIED LOAD, V_{ap}

$$V_{ap} = 12.8^K < V_{ar} = 31.8^K \quad \underline{OK}$$

EXAMPLE 2

CHECK CONCRETE BEARING STRENGTH OF LEDGE, REFER TO ACI 318-89 SECTION 10.15

BEARING STRENGTH = $\phi(.85 f'_c A_1)$
WHERE $\phi = 0.7$ (SECTION 9.3.2.4)
$f'_c = 4{,}000$ psi (GIVEN ON PAGE 2-1)
A_1 = BEARING LOAD AREA = $w_2 b_1$
$A_1 = 3.5"(4.5") = 15.75\ in^2$

CONCRETE BEARING STRENGTH
$= 0.7(.85)(4 ksi)(15.75 in^2)$
$= 37.5^K$

CONCRETE BEARING STRENGTH $> V_{ap} = 12.8^K$ OK

SOLUTION BY TABLES

USE $t = \frac{1}{2}"$ TABLES FOR PLAIN MASTICORD ON PAGE 30 ENTER TABLE WITH $w_1 = 4.5"$, $b_1 = 3.5"$ AND $A = 0.02$ RADIANS

READ $V_{ar} = 31.9^K$

SOLUTION BY CURVES

USE FIGURE 11 TO FIND S_{nr}
ENTER TABLE WITH $SF = 1.97$

READ $S_{nr} \cong 2{,}500$ psi

(EQ 3) CALCULATE $V_{nr} = \frac{2500 psi (3.5")(4.5")}{1000}$

$V_{nr} = 39.4^K$

PAGE 2-5

EXAMPLE 2

USE FIGURE 12 TO FIND R
ENTER CURVES WITH $t = \frac{1}{2}"$ AND $A = .02$ RAD.
READ $R = 0.83$

CALCULATE V_{ar}
(EQ. 5) $V_{ar} = 39.4^K (.83) = 32.7^K$

(NOTE: CURVE VALUES ARE NOT AS EXACT AS EQUATION VALUES.)

DETERMINE SHEAR FORCE

SOLUTION BY EQUATIONS

(EQ. 9) $N = 0.012 S_{ap} \sqrt{e_s}\, b_1 w_2$

FIND THE APPLIED COMPRESSIVE STRESS

(EQ. 8) $$S_{ap} = \frac{V_{ap}}{b_1 w_2} \times 1000$$

$$S_{ap} = \frac{12.8^K}{(3.5")(4.5")} \times 1000 = 813 \text{ psi}$$

USE $e_s = 75\%$ FOR DESIGN

$$N = 0.012(813 \text{psi})(\sqrt{75})(3.5")(4.5")$$
$$N = 1{,}331 \text{ lbs}$$

CALCULATE N AT $d_h = 0.29"$

$$e_s = \frac{0.29"}{0.50"} \times 100 = 58\%$$

$$N = 0.012(813 \text{psi})(\sqrt{58})(3.5")(4.5") = 1{,}170 \text{ lbs.}$$

PAGE 2-6

EXAMPLE 2

SOLUTION BY CURVES

USE FIGURE 13, PAGE 19

ENTER CURVE WITH $S_{ap} = 813$ psi AND $e_s = 75$

READ SHEAR STRESS

$S_s = 85$ psi

CALCULATE N

$N = S_s b_1 w_2 = 85 \text{ psi} (3.5") (4.5")$

$N = 1339$ lbs.

TEST PROGRAM SUMMARY

Several studies have been performed on **MASTICORD™** bearing pads over the life of the product. The first and second test programs were performed by Raths, Raths & Johnson, Inc. (RRJ). These tests were used to engineer the product, verify the physical properties and determine a design procedure. The resulting capacities were confirmed by a cyclic load test program performed at the University of Colorado. The most recent test program (Test Program 3) by RRJ was undertaken in order to maximize the bearing capacities based on field performance and new test data. The testing, results, performance parameters and empirical equations are only to be applied to **MASTICORD™**. No other bearing pad composition performs to these same standards.

Test Program 2 studied: the effects of bearing pad dimensions of length, width, thickness and shape factor; the relationship between compressive stress and strain for uniform and non-uniform loading; the relationship between compressive stress and strain for constant and non-constant area loading; shear stress strain behavior and its relationship to compressive stress and pad size; creep under compressive loads; and coefficients of friction. These results were presented in the ***MASTICORD™*** *Design Guide,* 1984 Edition.

Test Program 3 built upon the knowledge gained in the first 2 test programs and concentrated on the relationship between uniform and non-uniformly loaded pads, as well as considering user requirements. The most severe type loading, a double-tee application, was tested in depth and the results extrapolated to other member types. A further study of the behavior and effect of the angle of rotation for initial cracking and permanent deformation was completed. In addition, the behavior of the **MASTICORD™**/Teflon® slide bearings was explored, resulting in design and fabrication modifications of the **Dynalon™** slide bearing.

Test Programs 2 and 3 indicate initial cracking of the bearing pad occurred at a maximum compression strain of 40 percent or somewhat greater. The first cracks typically developed on the pad's perimeter. Other than resulting in cracking, strains greater than 40 percent were not detrimental to the bearing pad's compressive performance as observed for test loads in excess of 5,000 psi.

The shape factor was recognized in Test Program 2 as an important characteristic of behavior. Different pad sizes with the same shape factor behaved similarly. This fact was carried over into Test Program 3 which also employs shape factor in the design equations.

The relationship between uniformly and non-uniformly loaded pads in Test Program 3 was explored by using the same test setup and load application for pads loaded with the angle of rotation equal to zero and those with rotations greater than zero. This was unlike Test Program 2 which used two different test setups and types of load application for each of the rotation conditions. The results varied between the two programs. Test Program 3 is a better approximation of actual behavior. In addition, the new mathematical relationships were developed by comparing test load with rotation to test load without rotation, whereas the old expression was derived from a comparison of the test load with rotation to the calculated load without rotation. These differences account for the change in the way the maximum allowable load with rotation is calculated. Previously, an increase in load was allowed at small angles of rotation. Currently, the maximum allowable load decreases as the angle of rotation increases. The final results indicate the allowable loads are higher at zero rotation and the allowable loads are approximately the same as previously reported at rotations greater than zero.

The empirical equations have been revised for the ***MASTICORD***™ *Design Guide,* Third Edition.

- The ultra-conservative approach used in Test Program 2 was relaxed.
- The limiting strain was increased from 30 to 40 percent considering the calculated load capacity is not exact but a lower-bound approximation based on simplifying assumptions.
- The new test design allowed an "apples to apples" comparison of the behavior at zero rotation and at greater-than-zero rotations.
- The 2,000 psi upper limit on bearing pad compression stress was removed from the shear relationship in order to take advantage of the higher allowable load capacities observed in Test Programs 2 and 3.

Test Program 3 was performed using 3-1/2 inch by 4-1/2 inch **MASTICORD**™ pads with thicknesses of 3/8 inch, 1/2 inch and 3/4 inch. The test mechanism consisted of loading two pads simultaneously using four 45-ton hydraulic rams, a specially designed test frame as shown in Figure 20. The angle of rotation was imposed on the pads by using a removable shoe which was milled to the exact angle of rotation: 0, 0.02, 0.04, 0.06, or 0.08 radian. Strain was monitored by a dial gage which read the maximum deformation at the exterior edge of the pad. Observations were made as to when initial cracking and tearing occurred. Loads applied at 40 percent strain maximum on the various pad thicknesses ranged from 14 kips at 0.08 radians to 86 kips at 0 radians.

The design procedure developed from the tests considers tolerances in calculation of the angle of rotation. Pads may also be improperly placed, having one or more edges not fully loaded. A series of 3-1/2 inch by 4-1/2 inch pads were tested in this configuration by loading an area of 2-3/4 inches by 3-3/4 inches, thereby having a portion of the pad unloaded. These tests confirmed the allowable loads may be calculated using the typical design methods but substituting the actual loaded area (in this case, 2-3/4 inches and 3-3/4 inches) in all calculations. This situation will most often be found when checking the allowable load for actual in-place field conditions.

The use of one test machine in Test Program 3 allowed a simplified approach to determining the allowable load relationship between uniformly loaded pads and non-uniformly loaded pads with rotation. In the procedure, a small pad, 3-1/2 inches by 4-1/2 inches in area, was tested. This approach decision recognizes smaller pads carry smaller load. When considering the magnitude of the loads, it was apparent that testing larger pads was not a practical issue. The results were empirically extrapolated to larger sized pads. Due to the extrapolation, the allowable load on larger size pads will be more conservative. Moreover, the relationship of R internally accounts for w_2, the load width under rotation, which simplifies the empirical equations. Notice in the load tables that the allowable load of a pad with w_1 and b_1 of 3 inches and 5 inches is equivalent to a pad measuring 5 inches by 3 inches. In reality, the 5-inch by 3-inch pad is capable of supporting more load, therefore the table result is more conservative.

Cyclic load conditions on **MASTICORD**™ were studied at the University of Colorado in 1987. The tests included one direction cyclic compression, cyclic shear and rotation and combinations of these loading conditions. Results confirmed the findings of Test Program 2 and can be found in a paper titled *Responses of Random-Oriented-Fiber and Neoprene Bearing Pads Under Selected Loading Conditions,* prepared for the Second World Congress on Joint Sealing and Bearing Systems for Concrete Structures, by Alex Aswad and Leonard G. Tulin.

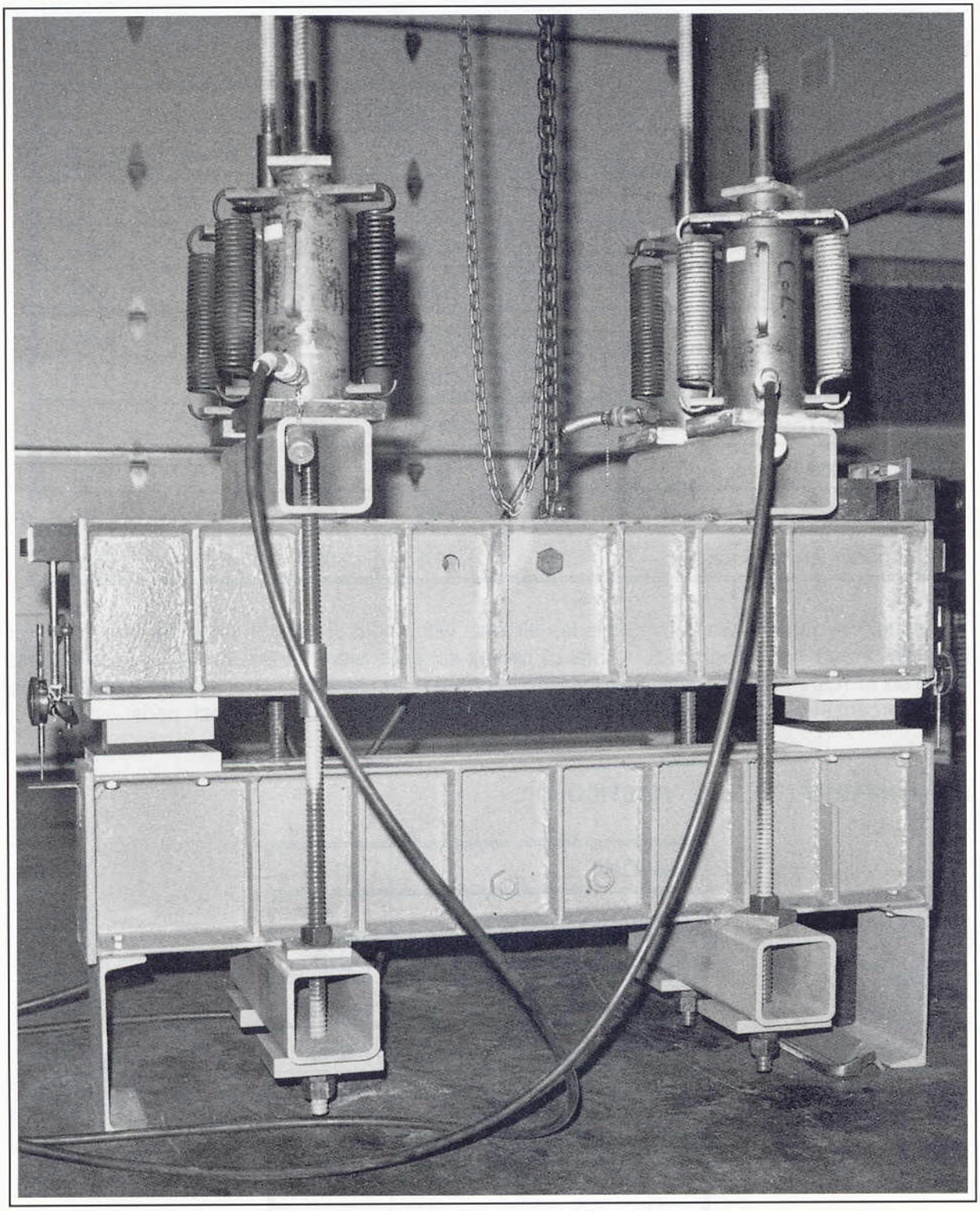


Figure 20 - MASTICORD™, DYNALON™ Test Machine

EVALUATION OF TEST RESULTS

UNIFORM LOAD - MASTICORD™

	SHAPE FACTORS				
Test/Calc	SF=1	SF=2	SF=4	SF=6	ALL SF
Mean	1.09	1.13	1.44	1.19	1.18
Standard Deviation	0.31	0.50	0.73	0.43	0.51
Variance	0.10	0.25	0.53	0.19	0.26
Maximum	2.26	4.43	5.25	2.60	5.25
Minimum	0.75	0.68	1.02	0.94	0.68
Maximum Test Strain	75%	61%	45%	43%	75%
No. of Data Points	86	90	48	27	251
Amount with Mean < 1	48%	41%	0%	41%	35%
Amount with Mean ≥ 1	52%	59%	100%	59%	65%

The statistical data shown above includes all tests with angle of rotation equal to zero, from Test Program 2 and Test Program 3. A total of twenty-six pads were tested, twenty in Test Program 2 and six in Test Program 3. The test/calc values were computed at all stress levels. Loads applied at 40 percent strain ranged from 14 kips to 86 kips on 3-1/2 inch by 4-1/2 inch pads.

NON-UNIFORM LOADING - MASTICORD™

Test/Calc	All SF
Mean	1.91
Standard Deviation	0.81
Variance	0.65
Maximum	5.40
Minimum	0.77
Maximum Test Strain	60%
No. of Data Points	52
Amount with Mean < 1	8%
Amount with Mean ≥ 1	48%

The test data were equally distributed among four angles of rotation: 0.02, 0.04, 0.06 and 0.08 radian. The calculated values used the known angle of rotation and the strain measured in each load increment of the tests. All tests were performed on 3-1/2 inch by 4-1/2 inch pads with thicknesses equal to 3/8 inch, 1/2 inch and 3/4 inch. Loads up to 59,000 pounds were applied to a 3-1/2 inch by 4-1/2 inch pad in this series of tests.

SHEAR-COMPRESSION LOADING - MASTICORD™

Test/Calc	All Tests
Mean	1.21
Standard Deviation	0.27
Variance	0.07
Maximum	1.94
Minimum	0.75
No. of Data Points	276

The shear-compression tests used 4-inch square bearing pads, 3/8 inch, 1/2 inch and 3/4 inch thick. A total of six new tests were performed, one of each thickness at 2,000 psi and 3,000 psi compressive load. The test/calc values were determined using the actual shear strains and compressive stresses from results of Test Program 2 and 3, and calculating the shear stress using Equation 9.

UNIFORM LOAD - DYNALON™

Test/Calc	All SF
Mean	2.31
Standard Deviation	0.96
Variance	0.93
Maximum	8.92
Minimum	1.50
Maximum Test Strain	65%
No. of Data Points	75
Amount with Mean > 1	0%
Amount with Mean ≤ 1	100%

Test data for **Dynalon™** proved that the typical **MASTICORD™** design equations could be employed since all test/calculated values were greater than one. Tests were performed on 3-1/2 inch by 4-1/2 inch pads with thicknesses of 3/8 inch, 1/2 inch, and 3/4 inch. Each pad had 3/32-inch Teflon® epoxy bonded to the **MASTICORD™**. Loads of up to 88,240 pounds and strains of 65 percent were imposed on these pads.

FRICTION VALUES - MASTICORD™ AND DYNALON™

Static Friction Coefficient

MASTICORD™ to steel or concrete	0.7 to 0.9
Teflon® to stainless steel, 2B finnish	0.07 (for **Dynalon™** pads)

Determined by tests using gravity loadings on an inclined plane where the angle of the inclined plane was measured when sliding initiated.

Slipping Friction Coefficient

MASTICORD™ to steel or concrete	0.2 to 0.5

Determined from shear-compression tests where the coefficient is the ratio of the maximum test shear load prior to slipping to the constant test compression load. This slipping friction coefficient sets an upper limit on the shear force which will develop.

Sliding Friction Coefficient

Teflon® to stainless steel, 2B finish	0.05 (for **Dynalon™** pads)

Determined from a shear-compression test as the load necessary to continue sliding movements, in the first cycle, divided by the constant compressive force. As more cycles were induced on the pad, the coefficient of friction decreased.

SUMMARY

The design relationships stated in this ***MASTICORD***™ *Design Guide*, Third Edition are conservative as evidenced by the mean test over calculated (test/calc) values greater than 1.0 given in the tables. A value of 1.0 indicates the empirical expression exactly matches the test data, a value less than 1.0 signifies an unconservative approximation and a value greater than 1.0 signifies a conservative approximation. The design was also simplified by considering the reduced bearing length due to angles of rotation as part of the reduction factor and the use of less complex equations.

LIMITED WARRANTY

The ***MASTICORD™*** *Design Guide* is provided "as is" without warranty of any kind, either expressed or implied, including, but not limited to the implied warranties of merchantability and fitness for a particular purpose. The entire and whole risk as to the quality, adequacy, correctness, and performance of the ***MASTICORD™*** *Design Guide* is with the user.

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THE BEARING PAD PEOPLE

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