

MEMO 509

BSF - WINTER CONDITIONS, FIRE
PROTECTION & CORROSION

PLANNING

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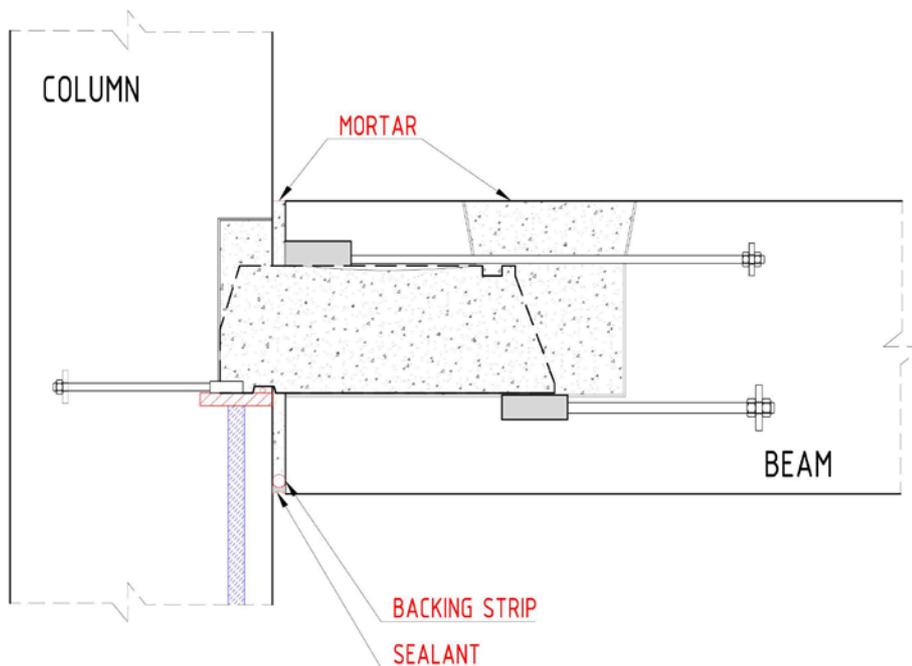
BSF - WINTER CONDITIONS, FIRE PROTECTION & CORROSION

WINTER CONDITIONS

There are only two - rather obvious - precautions to be taken when the BSF-system is used at temperatures below freezing:

- **Water or snow must be prevented from entering the voids of both the column and the beam units.** If there is ice in the voids it must be melted with a torch before erection. Trapped water resulting from melting ice/snow must be drained from all areas to be grouted.
- **Frost resistant grout must be used for filling the slot in the beam unit and for encasing the knife in the space between the beam end and column face.** At very low temperatures the instructions from the grout manufacturer must be adhered to, and one may in extreme cases have to postpone the grouting and wait for higher temperatures. Alternatively heating may be applied, but care has to be taken to ensure that the temperature remains sufficiently high until the grout has hardened.

FIRE PROTECTION



The sides and bottom perimeter of the space between the beam end and the column can be sealed with a backing strip, and the joint concreted. If it is desirable, a fire resistant sealant can be used to cover the backing strip. Alternatively, the backing strip can be removed.

CORROSION

To avoid rusting, and thereby staining of the concrete units during outdoor storage at the precast factory or at the site, - it is common to protect the openings in the beams and columns by tape or foamed polystyrene. This prevents water and ice getting into the boxes.

Many factories also paint the external surfaces of both the beam and the column unit, and sometimes the knife, with protective paint. We recognize this as good practice and recommend this.

REVISION HISTORY	
Date:	Description:
01.10.2013	First Edition
28.11.2013	Included comments from external review
27.02.2015	Included a nut on the front side of the steel plate anchoring the threaded bars. (To ensure correct position of the plate when casting the concrete).
23.05.2016	New template