

MEMO 522b

BSF 300

EXAMPLE: REINFORCEMENT IN BEAM

END WITH MAXIMUM LOAD 300kN

DESIGN

Date: 17.04.2013

Last rev.: 13.11.2018

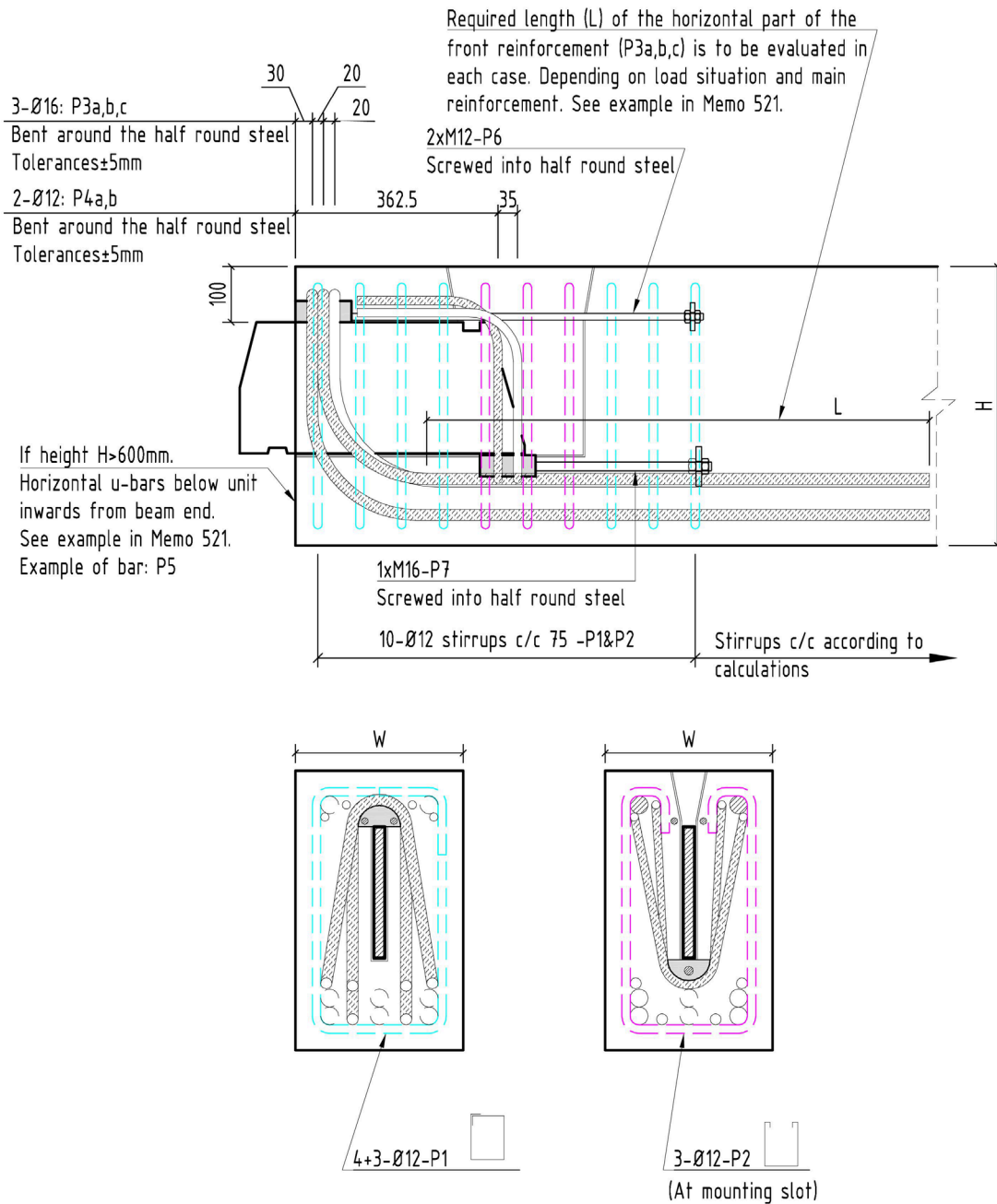
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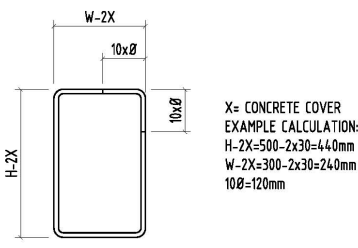
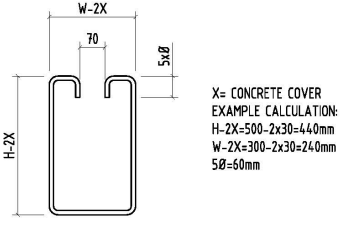
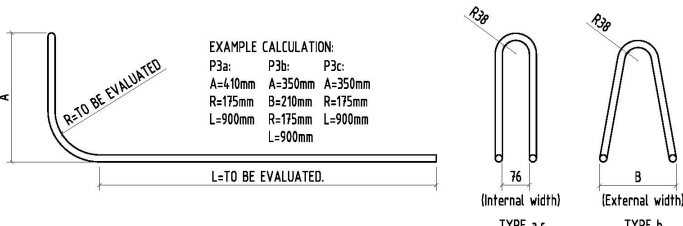
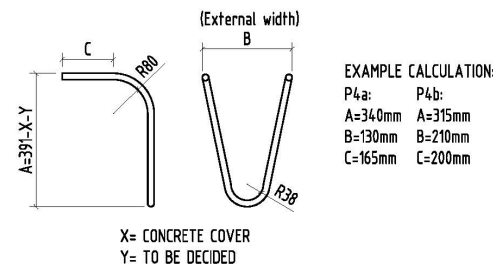
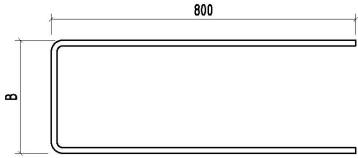
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## EXAMPLE: BSF 300 - REINFORCEMENT IN BEAM END WITH MAXIMUM LOAD 300kN



**Figure 1: Reinforcement in beam end.**

The basis for the illustrated reinforcement is found in the example calculations in Memo 521. The amount of reinforcement and final shape of several of the bars has to be evaluated in each case. This can be done according to the procedures outlined in the Memo. Concrete quality C35 and beam dimension: W×H=300×500 is used in the example calculation. This corresponds to the approximate minimum cross section of the beam in order to utilize the full capacity of the unit.

Pos.	Ø	No. pr. unit	Bar schedule	Grade
P1	Ø12	7	 <p>X= CONCRETE COVER EXAMPLE CALCULATION: H-2X=500-2x30=440mm W-2X=300-2x30=240mm 10Ø=120mm</p>	500C (EC2, Annex C)
P2	Ø12	3	 <p>X= CONCRETE COVER EXAMPLE CALCULATION: H-2X=500-2x30=440mm W-2X=300-2x30=240mm 5Ø=60mm</p>	500C (EC2, Annex C)
P3a,b,c	Ø16	1+1+1	 <p>EXAMPLE CALCULATION: P3a: A=410mm R=175mm L=900mm P3b: A=350mm R=175mm L=900mm P3c: A=350mm R=175mm L=900mm</p> <p>R=TO BE EVALUATED L=TO BE EVALUATED.</p> <p>(Internal width) TYPE a,c (External width) TYPE b</p>	500C (EC2, Annex C)
P4a,b	Ø12	1+1	 <p>EXAMPLE CALCULATION: P4a: A=340mm B=130mm C=165mm P4b: A=315mm B=210mm C=200mm</p> <p>X= CONCRETE COVER Y= TO BE DECIDED</p>	500C (EC2, Annex C)
P5	Ø12		 <p>In beams with H&gt;600mm. Number to be decided. B=to be decided.</p>	500C (EC2, Annex C)
P6	M12	2	Threaded bar. Length = 650 mm With plate 50x50x8 and 2 nuts, one on each side of plate.	Thr. bar: 8.8 Plate: S355
P7	M16	1	Threaded bar. Length = 350 mm With plate 70x70x10 and 2 nuts, one on each side of plate.	Thr. bar: 8.8 Plate: S355

**Table 1: List of reinforcement.**

REVISION HISTORY	
Date:	Description:
17.04.2013	First Edition (for ETA)
12.06.2013	Updated before ETA. Corrected reinforcement quality notation from: B500C to 500C.
28.08.2013	Included revision signature.
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).
24.05.2016	New template
13.11.2018	Included threaded bars in list of reinforcement