

COMMERCIAL DOCUMENTATION

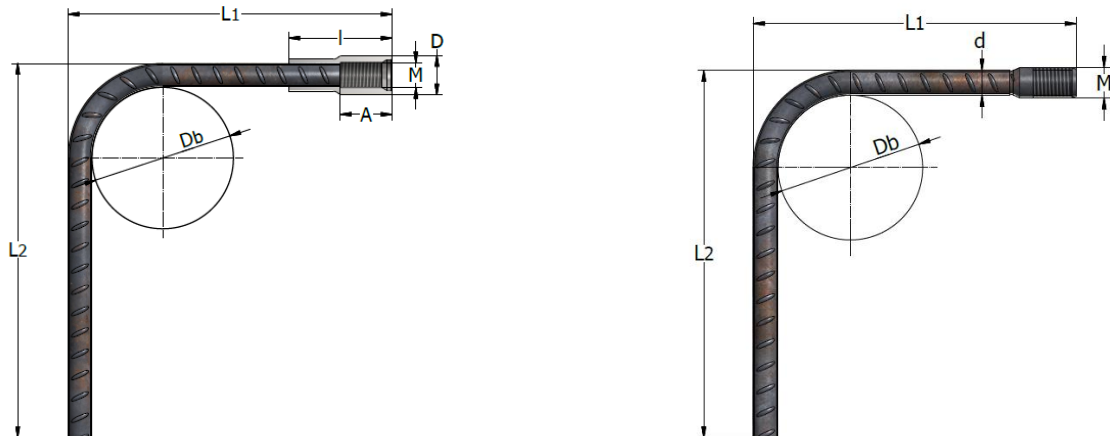


REBAR CONNECTION SYSTEM | TSEG BENT REINFORCEMENT COUPLERS



PSAG AND TSEG - BENT REINFORCEMENT COUPLERS

The bent PSAG reinforcement coupler consists of reinforcement steel bent with a sleeve pressed on one end.



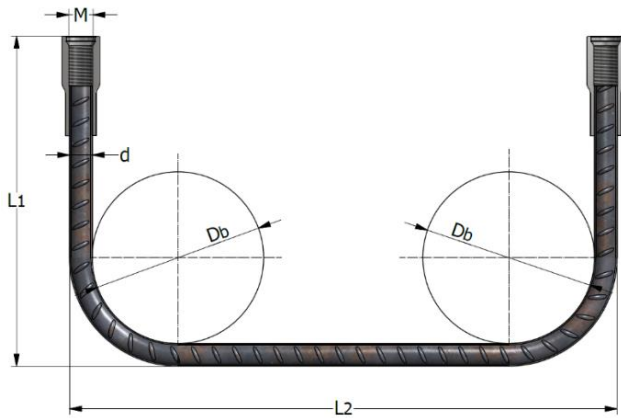
| PSAG | | Bush diameter | Bush length | Rebar diameter | Thread | |
|-----------------------|-------------------|---------------|-------------|----------------|--------|------|
| Description | Product range no. | D | l | d | Metric | A |
| | | [mm] | [mm] | [mm] | [mm] | [mm] |
| PSAG 10 - M12 - L1xL2 | 91206 | 17.5 | 50 | 10 | 12 | 18 |
| PSAG 12 - M16 - L1xL2 | 90708 | 22 | 62 | 12 | 16 | 25 |
| PSAG 16 - M20 - L1xL2 | 90709 | 28 | 86 | 16 | 20 | 38 |
| PSAG 20 - M24 - L1xL2 | 91207 | 34 | 99 | 20 | 24 | 42 |
| PSAG 25 - M30 - L1xL2 | 90707 | 42.5 | 117 | 25 | 30 | 52 |
| PSAG 28 - M36 - L1xL2 | 91235 | 50 | 130 | 28 | 36 | 55 |
| PSAG 32 - M42 - L1xL2 | 91208 | 56 | 153 | 32 | 42 | 65 |

The PSAG or TSEG coupler generally has a bent diameter $D_b = 10 \times d$, but on request, it can be manufactured at $D_b = 15 \times d$ or $D_b = 20 \times d$. Other lengths, such as L_1 and L_2 are also available on request: **PSAG (TSEG) d x length L₁ x L₂ in mm**. When choosing dimensions L_1 and L_2 , the minimum size according to the table below should be taken into account. L_1 is the length measured from the front of the coupler to the back of the reinforcing bar.

The minimum dimensions for bending are presented in the following table. The diameter to which a bar is bent should be such that damage to the reinforcement and crushing of concrete inside the bend of the bar are avoided. According to Eurocode 2, minimum bend diameter should be:

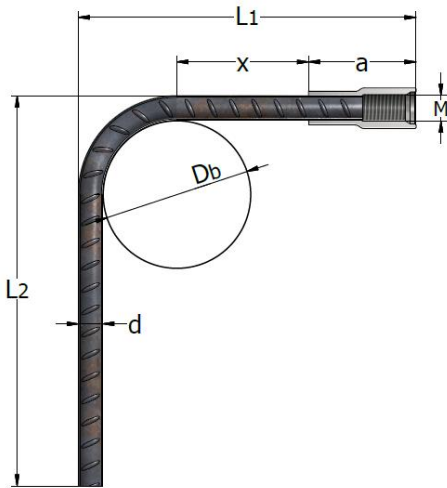
- $D_{bmin} = 4 \times d$ for bar diameter $d \leq 16\text{mm}$
- $D_{bmin} = 7 \times d$ for bar diameter $d > 16\text{mm}$

DOUBLE BENT COUPLER PSAGGD

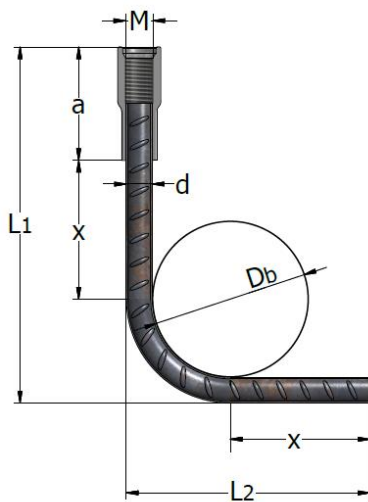


Other lengths are available on request PSAGGD – d x L₁ x L₂ in mm

Minimum dimensions of bent reinforcement couplers



| Rebar diameter d | 10 | 12 | 16 | 20 | 25 | 28 | 32 | 40 |
|-----------------------------------------------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|
| a | 50 | 62 | 86 | 100 | 117 | 130 | 153 | 188 |
| Bend diameter Dbmin | 4xd | 4xd | 4xd | 7xd | 7xd | 7xd | 7xd | 7xd |
| x _{min} = 5xd acc. to Eurocode 2 | 50 | 60 | 80 | 100 | 125 | 140 | 160 | 200 |
| L ₁ minim | 130 | 160 | 215 | 290 | 355 | 395 | 460 | 570 |
| On request, the bends can also be made at the dimensions below | | | | | | | | |
| x _{min} = 2xd | 20 | 24 | 32 | 40 | 50 | 56 | 64 | 80 |
| L ₁ minim | 100 | 125 | 165 | 230 | 280 | 315 | 360 | 450 |



| Rebar diameter d | 10 | 12 | 16 | 20 | 25 | 28 | 32 | 40 |
|-------------------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|
| a | 50 | 62 | 86 | 100 | 117 | 130 | 153 | 188 |
| Bend diameter Dbmin | 4xd | 4xd | 4xd | 7xd | 7xd | 7xd | 7xd | 7xd |
| x _{min} = 5xd acc. to Eurocode 2 | 50 | 60 | 80 | 100 | 125 | 140 | 160 | 200 |
| L ₂ minim | 80 | 96 | 130 | 190 | 240 | 265 | 305 | 380 |

The length for the bent reinforcement coupler can be calculated using the formula:

$$L = L_1 + L_2 - a, \quad \text{for a single bend}$$

$$L = L_1 + L_2 + L_1 - 2a \quad \text{for double bends}$$

$$x = (D_b + 2d) - b \quad \text{"b" is the length in the bending area, "a" reduction of the bar length due to bending}$$

| "a" reduction of the bar length due to bending | | Reinforcing bar diameter d (mm) | | | | |
|---------------------------------------------------|--------|---------------------------------|----|-----|-----|-----|
| | | 12 | 16 | 20 | 25 | 32 |
| Bend diameter D _b mm | 4 x d | 25 | 33 | - | - | - |
| | 7 x d | 33 | 44 | 54 | 68 | 87 |
| | 10 x d | 40 | 54 | 67 | 84 | 108 |
| | 15 x d | 53 | 71 | 89 | 111 | 142 |
| | 20 x d | 66 | 88 | 110 | 138 | 176 |

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