Remarks: See §5.4.1, example 2, pages 311 till 316

Answer:

$a = 0$

Explanation:

Cross-section properties:
$I = 1,2 \times 10^9 \text{ mm}^4$
$S^a = 4,1 \times 10^6 \text{ mm}^3$

Maximum shear force: $V_{max} = 22000 \text{ N}$

Maximum shear stress:

$$\tau_{max} = \frac{(22000 \text{ N})(4,1 \times 10^6 \text{ mm}^3)}{(120 \text{ mm})(1,2 \times 10^9 \text{ mm}^4)} = 0,63 \text{ N/mm}^2 < \overline{\tau} = 0,7 \text{ N/mm}^2$$

The maximum shear stress is below the given limiting value,
there is no need for extra provisions