

Properties of quenched and tempered special structural steels

ThyssenKrupp
high strength

N-A-XTRA®

and

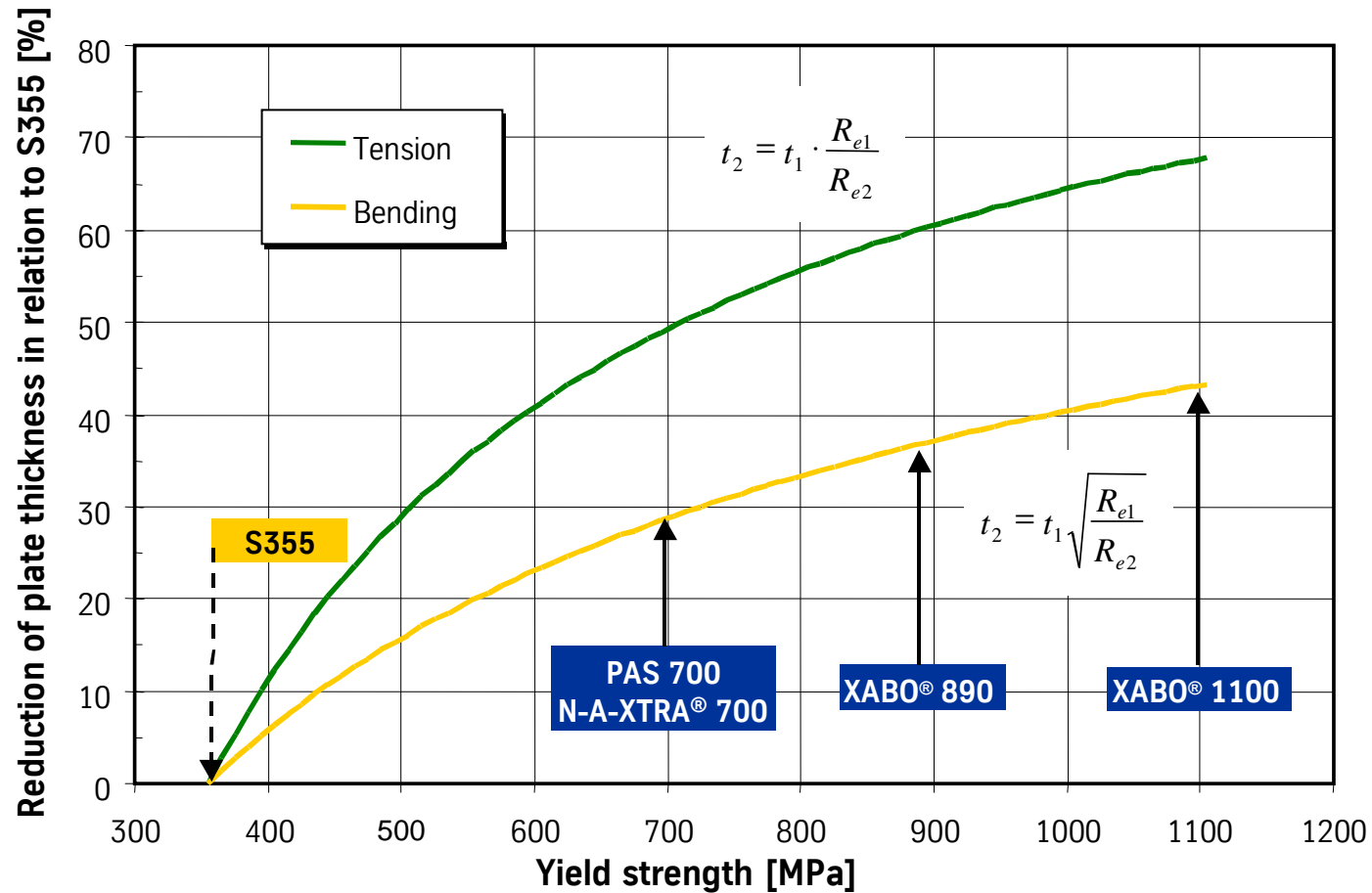
ThyssenKrupp
high strength

XABO®

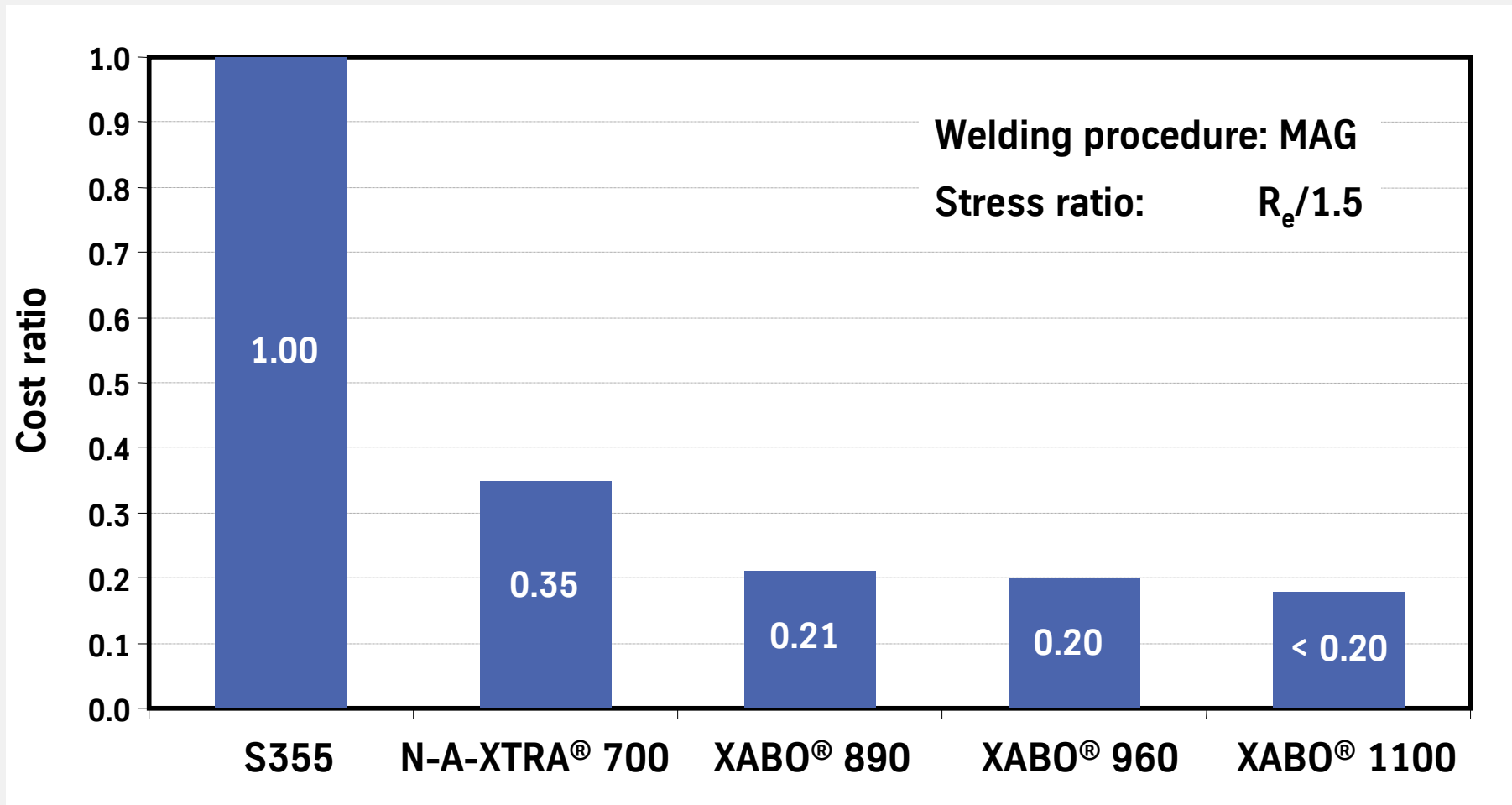
Steel grade	Quality acc. EN 10025-6	Added alloys	R _e , min [MPa]	R _m [MPa]	A _{min} [%]	T ₂₇ [°C]
N-A-XTRA® M 550	S550QL	CrMo	550	640 - 820	16	-40
N-A-XTRA® M 620	S620QL		620	700 - 890	15	-40
N-A-XTRA® M 700	S690QL		700	770 - 940	14	-40
N-A-XTRA® M 800	-		800	840 - 1000	11	-40
N-A-XTRA® 550	S550QL1	CrMo	550	640 - 820	16	-60
N-A-XTRA® 620	S620QL1		620	700 - 890	15	-60
N-A-XTRA® 700	S690QL1		700	770 - 940	14	-60
N-A-XTRA® 800	-		800	840 - 1000	11	-60
XABO® 890	S890QL	CrMoNiV	890	940 - 1100	11	-40
XABO® 960	S960QL		960	980 - 1150	10	-40
XABO® 1100	-		1100	1200 - 1500	8	-40



Reduction of plate thickness in relation to steel grade S355 by using high-strength special structural steels



Prime costs of welded structures in mobile crane manufacture



Quenched and tempered special structural steels

Dimensions and tolerances



Four-high mill plates

Thickness: 4 - 100 mm

Width: 1.000 - 3.300 mm

Length: 4.000 - 14.800 mm

Thickness tolerance*: $\Delta d \leq 0.7$ mm

(within a plate*: $\Delta d \leq 0.3$ mm)

Tolerances in width and length acc. to EN 10029

*valid for thickness up to 10 mm



Plates cut from hot strip

Thickness: 3 - 12 mm

Width: 820 - 2.000 mm

Length: 4.000 - 14.800 mm

Thickness tolerance*: $\Delta d \leq 0.4$ mm

(within a plate*: $\Delta d \leq 0,1$ mm)

Tolerances in width and length acc. to EN 10029

Quenched and tempered special structural steels cut from hot strip with excellent cold forming properties

- Dimensions available: thickness ≤ 10 mm, width ≤ 2000 mm
- minimum tonnage of 20 to 30 tons, no individual plate production

Advantages for construction and processing:



- **Very narrow tolerances**
(total thickness tolerance within a plate:
 $Dd \leq 0.1$ mm)
- **Very good flatness**
(≤ 3 mm/m)
- **High surface quality**
- **Excellent mechanical properties**
(minimum yield strengths up to 1100 MPa,
minimum hardness values up to 500 HB)

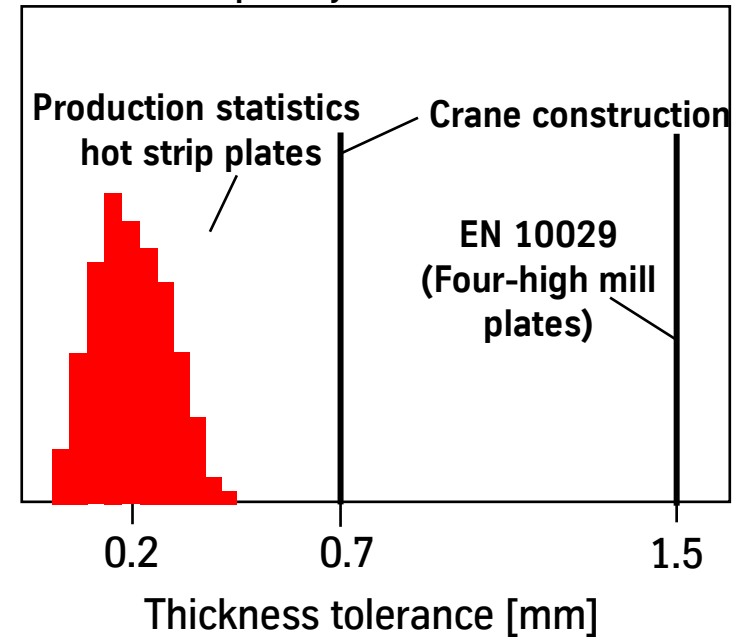
Advantage of hot strip plates regarding thickness tolerances



Max. width of hot strip plate [mm]

Thickness [mm]	XAR [®] 400	XAR [®] 450	N-A-XTRA [®] 700, 800 XABO [®] 890, 960
3 - 4	1,535 - 1,735	1,500 - 1,550	1,535 - 1,735
4 - 5	2	1,65	1,785 - 2,000
> 5	2	1,75	2

Relative frequency



Max. tolerable thickness tolerances:

Hot strip plates: ± 0.2 mm

Four-high mill plates: 0 / +0.7 mm
(thickness < 10 mm)