

Steel
Precision Steel

precidur[®] Microalloyed fine-grain structural steels

Hot-rolled fine-grain structural steels with extremely close thickness tolerances. Ideally suited for complex forming processes.



thyssenkrupp



precidur®

is our thyssenkrupp Hohenlimburg trademark for premium-quality precision strip. And it epitomizes the way our service and support are systematically focused on the individual and highly exacting requirements of our customers.

precidur[®] – our brand for precision strip

precidur[®] stands for extremely close thickness and profile tolerances in widths up to 720mm and thicknesses of 1.5 to 16mm; optimum surface properties, whether black or pickled; homogeneous material properties, full hard and annealed; a wide variety of grades, from unalloyed to high ductility and high strength to high-alloy; rounded mill edges without burrs or microcracks that ensure no embrittlement due to work hardening. All in all, precidur[®] offers the ideal prerequisites for optimum direct forming and excellent cold rolling process properties. precidur[®] stands for our qualitative edge, built up over more than 150 years, extended through ongoing

modernization measures and proof of our customer focus and our all-round reliability. Full process automation, unparalleled speed of production, short-term availability, maximum flexibility in putting together even small, tailored batch sizes, constant transparency and data availability, rapid response to short-notice change requests – in fact we're ideally prepared for every eventuality.

Or to put it another way: We are your premium partner for premium precision steel. Today, tomorrow and beyond. Together with precidur[®] we look forward to your challenge.

The advantages of precidur[®] at a glance:



Extremely close thickness and profile tolerances



Wide variety of grades



Homogeneous material properties, optimum surface quality



Tailored batch sizes



Ideal for processing and forming

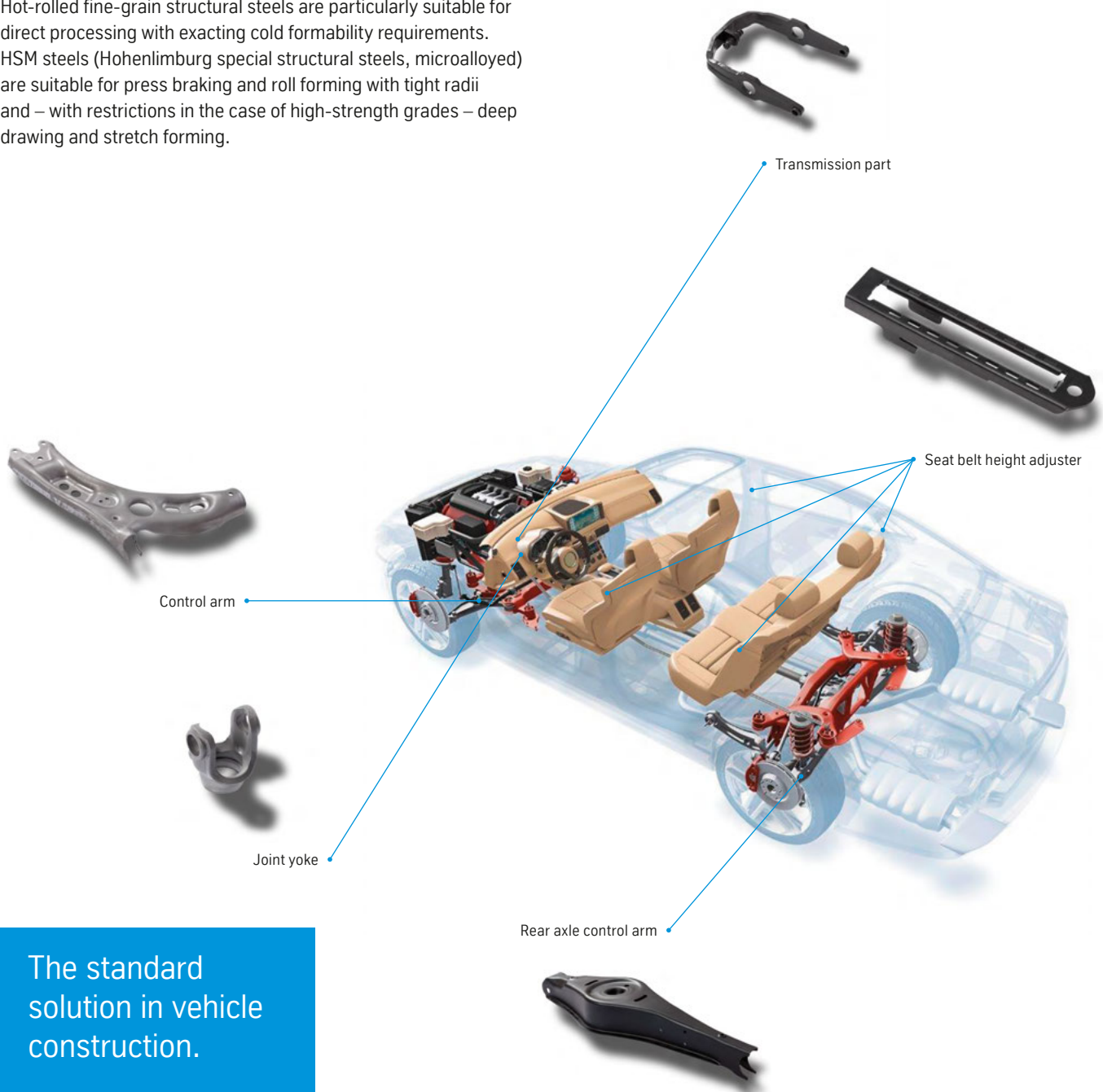


Quick, flexible and competent support and service

Microalloyed steels MC

precidur® microalloyed fine-grain structural steels are produced with low carbon equivalents in accordance with DIN EN 10149-2.

Hot-rolled fine-grain structural steels are particularly suitable for direct processing with exacting cold formability requirements. HSM steels (Hohenlimburg special structural steels, microalloyed) are suitable for press braking and roll forming with tight radii and – with restrictions in the case of high-strength grades – deep drawing and stretch forming.



The standard
solution in vehicle
construction.

Technical features

Mechanical properties MC grades

	Tensile strength	Yield strength	Elongation		In acc. with DIN EN 10149-2	Material number
	R _m [MPa]	R _{p0.2} [MPa]	A ₅ min. [%]	A ₈₀ min. [%]		
precidur® HSM 315	410 - 490	min. 315	min. 25	min. 21	S315MC	1.0972
precidur® HSM 355	430 - 510	min. 355	min. 25	min. 21	S355MC	1.0976
precidur® HSM 380	450 - 530	min. 380	min. 24	min. 20	S380MC*	1.0978
precidur® HSM 420	480 - 580	min. 420	min. 22	min. 18	S420MC	1.0980
precidur® HSM 460	520 - 620	min. 460	min. 20	min. 17	S460MC	1.0982
precidur® HSM 500	550 - 650	min. 500	min. 19	min. 16	S500MC	1.0984
precidur® HSM 550	600 - 700	min. 550	min. 18	min. 15	S550MC	1.0986
precidur® HSM 600	650 - 750	min. 600	min. 17	min. 14	S600MC	1.8969
precidur® HSM 650	700 - 820	min. 650	min. 16	min. 13	S650MC	1.8976
precidur® HSM 700	750 - 900	min. 700	min. 16	min. 12	S700MC	1.8974
precidur® HSM 760	810 - 960	min. 760	min. 16	min. 12	S760MC*	1.0968

*The precidur® HSM 380 and precidur® HSM 760 grades are additions to the familiar strength classes and meet the chemical analysis requirements pursuant to DIN EN 10149.

Test direction: in rolling direction

Possible delivery options for MC grades

Options	Mill edge Cut edge	pickled	black	slit	trimmed	cut to length

General thickness tolerances for precidur®

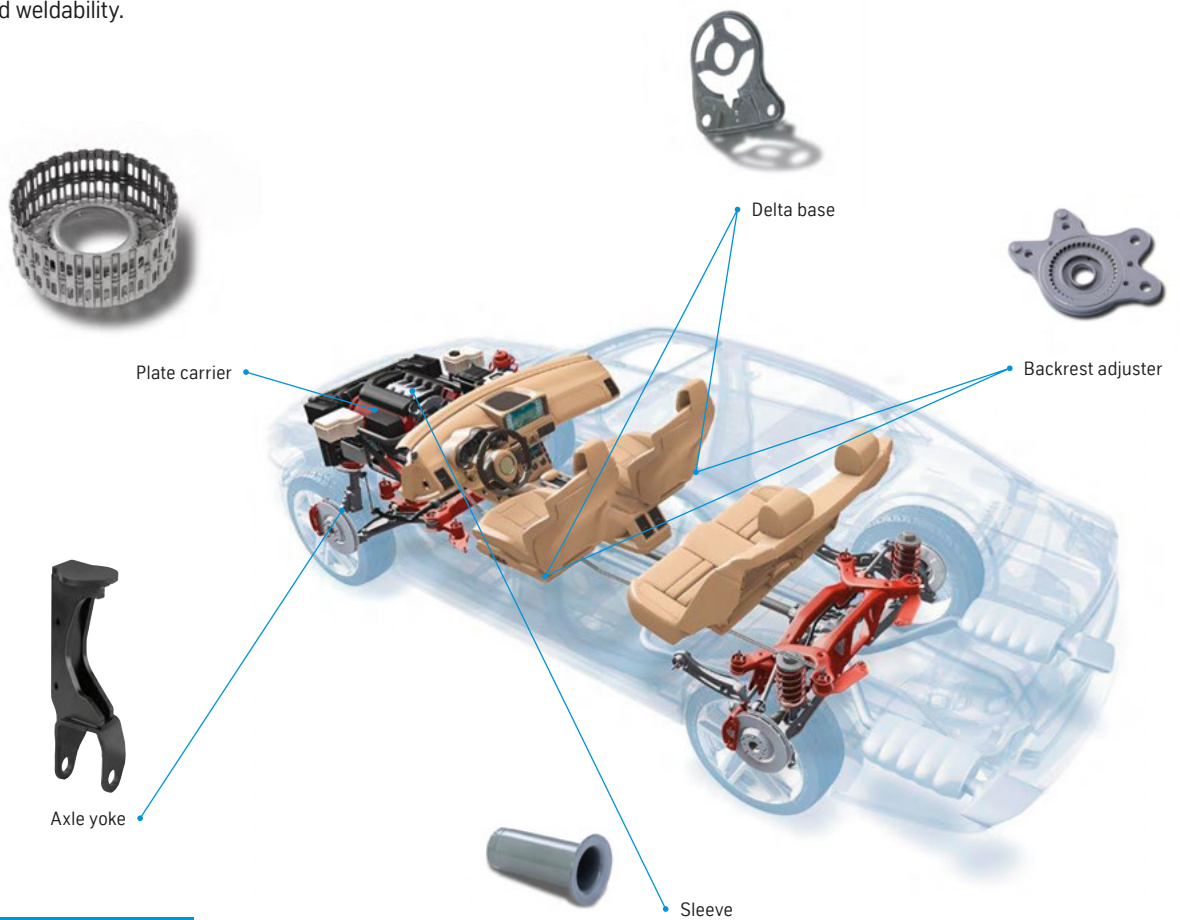
Strip thickness [mm]	1.5 - 2.54	2.55 - 4.03	4.04 - 6.03	6.04 - 8.03	8.04 - 9.03	9.04 - 11.03	11.04 - 14.03	14.04 - 16.00
Standard tolerances [mm]	± 0.04	± 0.04	± 0.05	± 0.055	± 0.06	± 0.07	± 0.08	± 0.10
Special tolerances [mm]	± 0.03	± 0.035	± 0.04	± 0.045	± 0.05	± 0.055	± 0.06	± 0.07

General delivery options for precidur®

Coil inside diameter – Ø:	Standard 508mm / optional 610mm
Coil outside diameter – Ø:	max. 1,890mm
Coil weight:	max. 20.5 kg/mm strip width
Strip width:	max. 720mm
Strip thickness:	1.5 – 16mm

Microalloyed steels HD

High ductility (HD) microalloyed fine-grain structural steels open up new design possibilities in lightweight auto construction. The high-quality precidur® steel grades are produced with a very fine microstructure and embedded nano-precipitates, while their extremely low carbon content counters the formation of coarse and brittle areas in the microstructure. That makes these materials particularly suitable for the forming of complex geometries. Compared with conventional microalloyed steels, our precidur® HD grades also offer higher shear strain values and multiaxial elongation, ensuring greater process reliability in component production and good weldability.



The solution for
complex forming
processes

Technical features

Mechanical properties of HD grades

	Tensile strength	Yield strength	Elongation		In acc. with DIN EN 10149-2	Material number
	R _m [MPa]	R _{p0,2} [MPa]	A ₅ min. [%]	A ₈₀ min. [%]		
precidur® HSM 315 HD	400 - 500	min. 315	min. 28	min. 23	S315MC	1.0972
precidur® HSM 355 HD	430 - 510	min. 355	min. 28	min. 23	S355MC	1.0976
precidur® HSM 380 HD	450 - 550	min. 380	min. 25	min. 20	S380MC	1.0978
precidur® HSM 420 HD	480 - 580	min. 420	min. 24	min. 19	S420MC	1.0980
precidur® HSM 460 HD	in development					1.0982
precidur® HSM 500 HD	550 - 670	min. 500	min. 20	min. 16	S500MC	1.0984
precidur® HSM 550 HD	600 - 700	min. 550	min. 20	min. 15	S550MC	1.0986
precidur® HSM 600 HD	650 - 820	min. 600	min. 17	min. 13	S600MC	1.8969
precidur® HSM 650 HD	700 - 860	min. 650	min. 17	min. 13	S650MC	1.8976
precidur® HSM 700 HD	750 - 900	min. 700	min. 16	min. 12	S700MC	1.8974

Test direction: in rolling direction

Possible delivery options for HD grades

Options	Mill edge Cut edge	pickled	black	slit		
				trimmed	cut to length	
precidur® HSM HD	Mill edge or cut edge	✓	✓	✓	✓	✓

General thickness tolerances for precidur®

Strip thickness [mm]	1.5 - 2.54	2.55 - 4.03	4.04 - 6.03	6.04 - 8.03	8.04 - 9.03	9.04 - 11.03	11.04 - 14.03	14.04 - 16.00
Standard tolerances [mm]	± 0.04	± 0.04	± 0.05	± 0.055	± 0.06	± 0.07	± 0.08	± 0.10
Special tolerances [mm]	± 0.03	± 0.035	± 0.04	± 0.045	± 0.05	± 0.055	± 0.06	± 0.07

General delivery options for precidur®

Coil inside diameter – Ø: Standard 508mm / optional 610mm

Coil outside diameter – Ø: max. 1,890mm

Coil weight: max. 20.5 kg/mm strip width

Strip width: max. 720mm

Strip thickness: 1.5 – 16mm

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