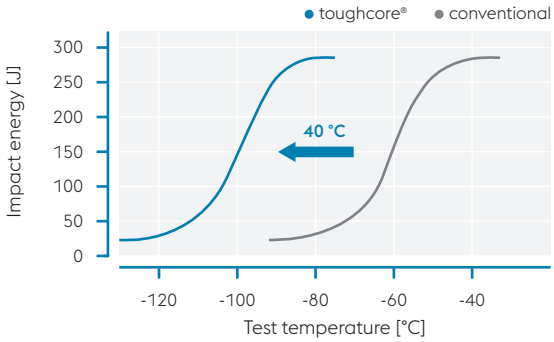
alform®

S355/420/460 ML toughcore
alform plate 355/420/460 M toughcore

Outstanding toughness even to the core up to 135 mm plate thickness

The new generation of thermomechanically rolled (TMCP) steel is manufactured in a completely new and patented process and in accordance to EN 10025-4 that enables unique combinations of properties with respect to thickness, strength, excellent toughness and best weldability. The so produced heavy plates show their remarkable potential particularly in the thickness range from 100 mm to 135 mm. alform® toughcore creates higher safety standards and enhances the potential for the use of heavy plates in steel construction, bridge building and the manufacture of penstocks, vehicles and cranes.

Charpy V-notch toughness (CVN) of plate*
Conventional vs. toughcore®
values in ¼ thickness
S420 M, t = 80 mm



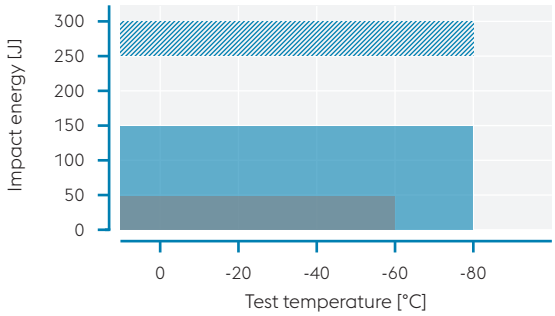
*) material properties shown on basis of 80 mm thickness and for reference – values for other thicknesses upon request.

voestalpine Grobblech GmbH
www.voestalpine.com/grobblech

voestalpine
ONE STEP AHEAD.

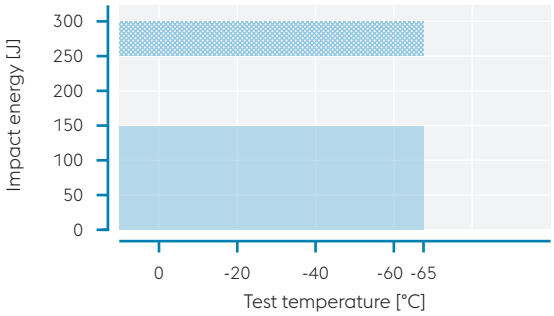
Comparison of guaranteed and typical values of toughness*

Conventional vs. toughcore®
values in ¼ thickness
S355 - 460 M, t up to 100 mm



typical values toughcore® up to 100 mm
guarantee values toughcore® up to 100 mm
guarantee values conventional up to 100 mm

toughcore®
values in ¼ thickness
S355 - 460 M, t >100 mm – 135 mm



typical values toughcore® > 100 – 135 mm
guarantee values toughcore® > 100 – 135 mm

*) indicative material properties shown for reference – actual values depending on grade, thickness and subject to mutual agreement.

The benefits of TMCP toughcore®

TMCP steels are produced with a lean material analysis combined with the TMCP process and accelerated cooling, which results in a very fine grain-structure and a homogenous surface in combination with extraordinary mechanical values.

Our heavy plates made of very pure steel (low sulphur and phosphorus content) generate a wide cost saving potential in respect to weldability, workability and thickness reduction due to higher yield strength.

Due to the homogenous microstructure over the entire cross-section, we are able to guarantee outstanding strength values even in half plate thickness, especially for high plate thicknesses.

Additionally toughcore® heavy plates are characterized by a higher uniform elongation of Ag ≥ 10%, which is not possible with a conventional production.

Convincing advantages of alform® toughcore

Extremely high toughness
Guaranteed impact values down to -80 °C

Higher levels of safety
Significantly lower transition temperature of -100 °C
Exploration of arctic regions
Lower risk of brittle fracture

Best weldability
Very low carbon content
Lower sensitivity to cold Cracking
No preheating even for higher wall thickness

OUR PATH TO A GREENER FUTURE

Premium products in the greentec steel Edition

With greentec steel, voestalpine is pursuing an ambitious step-by-step plan in the long-term decarbonization of steel production. The declared objective is to achieve carbon-neutral production by 2050, and the initial steps have already been taken. Process-optimized production operations already prevent up to 10% of the direct CO_2 emissions at the Linz site. The material and processing properties of the steel are not affected in any way in this production route. Each voestalpine heavy plate product is available in premium quality in the greentec steel Edition with a reduced carbon footprint and unique benefits.

greentec steel

Premium quality with reduced carbon footprint

alform®

greentec steel

Heavy plates (excl. heads and clad plates) – greentec steel Edition
Max. carbon footprint 2.21 kg CO_2e per kg of steel [1]

[1] per EN 15804+A2 (EPD methodology) cradle to gate

Please find further information about toughcore® and downloadable files at **www.voestalpine.com/toughcore/en**

Please find further information about alform® and downloadable files at **www.voestalpine.com/alform/en**

voestalpine Grobblech GmbH
voestalpine-Straße 3
4020 Linz, Austria
grobblech@voestalpine.com
www.voestalpine.com/grobblech

voestalpine
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