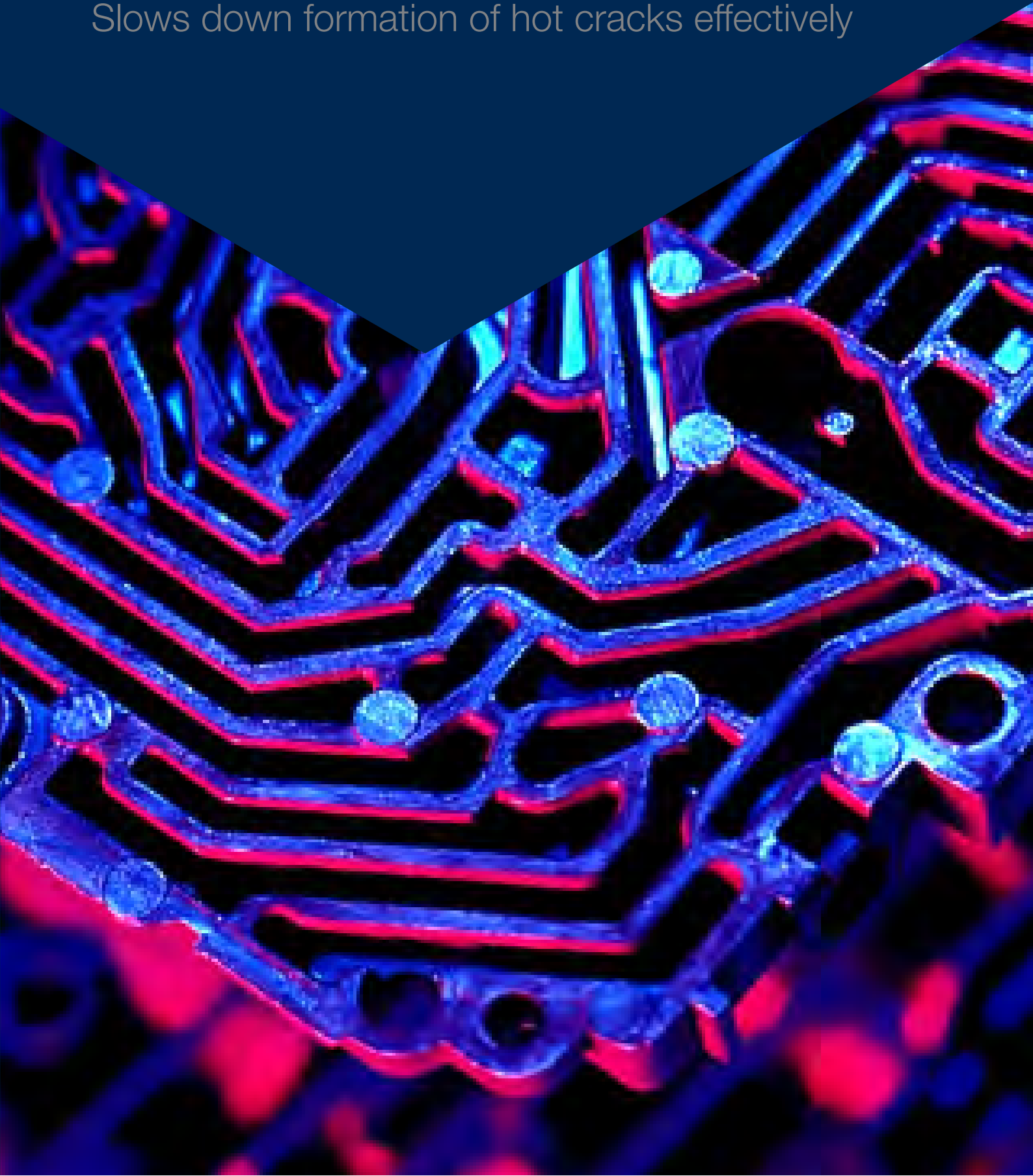


# Thermodur<sup>®</sup> E 40 K Superclean

Slows down formation of hot cracks effectively



## Thermodur® E 40 K Superclean – slows down formation of hot cracks effectively

During pressure die casting molten light metal is poured into a previously tempered mould at a tremendous velocity and at high pressure. In the process the mould is exposed to extreme mechanical and simultaneously thermal cyclic load. During the long production phases, fatigue cracks (hot cracks) form sooner or later due to these process-related factors.

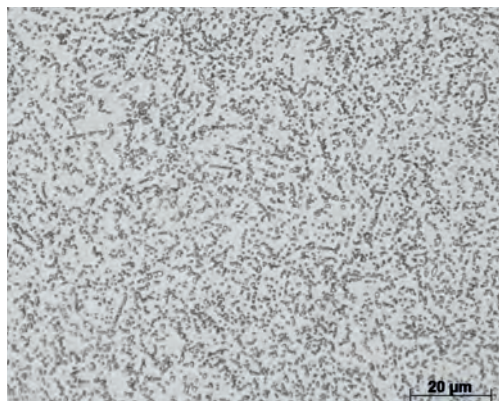
At the latest when the cracks merge together and chipping occur, they would be transferred to the surface of the die-cast component and result in the failure of the mould. Intelligent lightweight construction in the automotive industry leads among others to an increasing use of die-cast aluminium components also for structural elements. To meet these ever-expanding requirements Deutsche Edelstahlwerke has developed a high-quality special steel with excellent mechanical properties: Thermodur® E 40 K Superclean.

## Outstanding material competence for maximum performance and efficiency

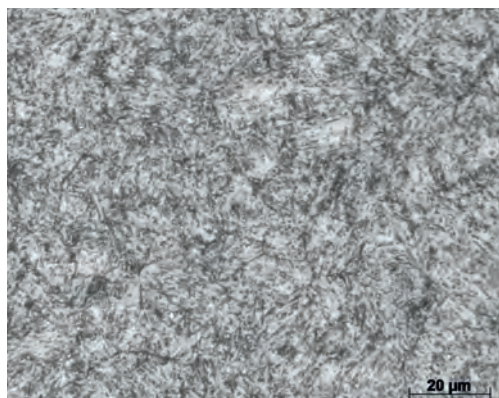
The chemical composition of this high-performance steel is precisely adjusted in the modern secondary metallurgic treatment facilities at Deutsche Edelstahlwerke.

Thermodur® E 40 K Superclean is treated to achieve an extremely homogeneous structure in both annealed and tempered states by means of an electro-slag remelting process and a special structural treatment.

As a result, Thermodur® E 40 K Superclean features the required properties of improved temperature stability combined with high toughness.

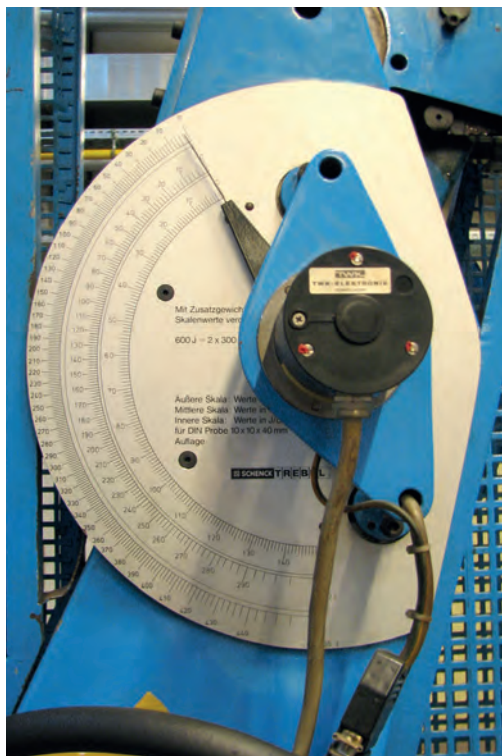
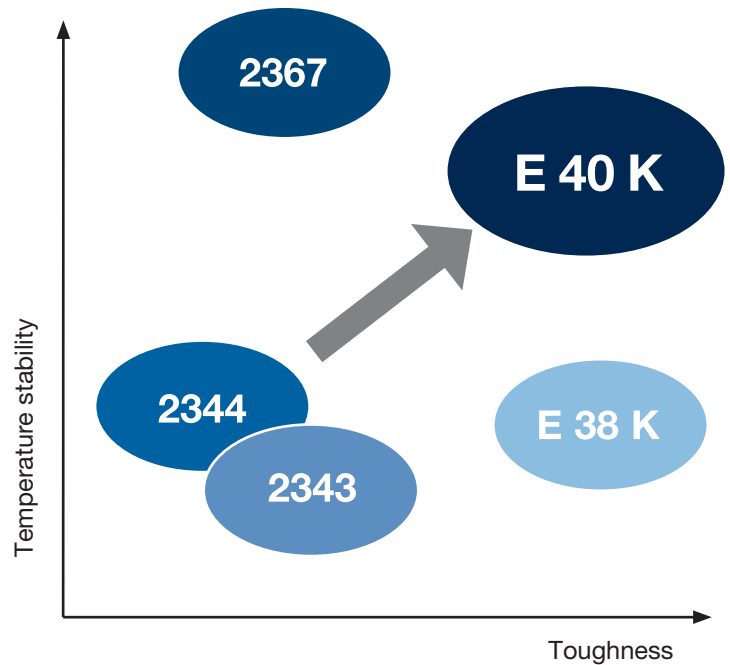


*Annealed structure*



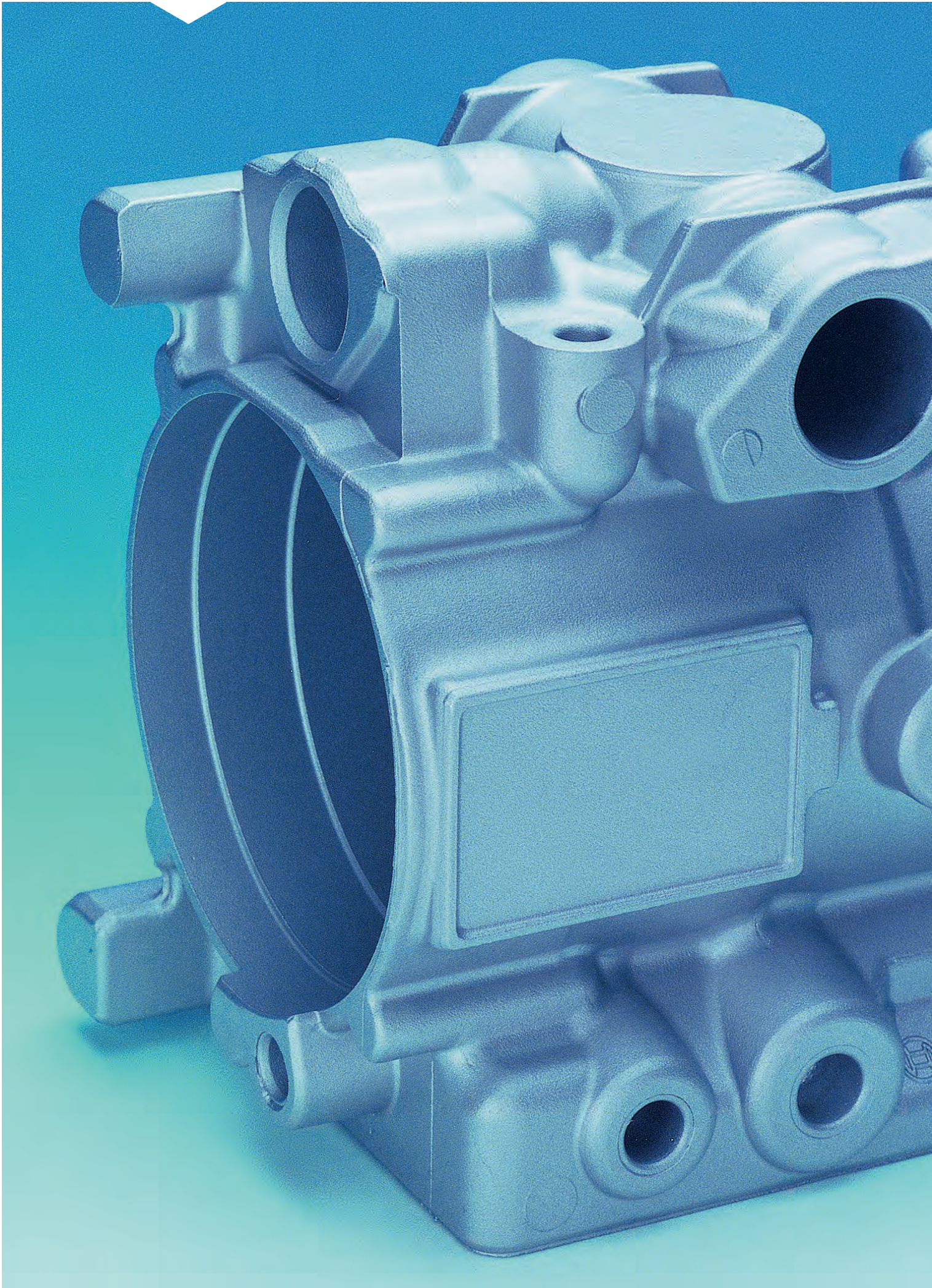
*Tempered structure*

Compared to other proven Cr-Mo-V alloyed hot-work steels Thermodur® E 40 K Super-clean offers the perfect combination of high temperature stability and toughness for highly stressed tools.



Impact bending samples (tempered to 44 - 46 HRC) after testing on a 450J pendulum impact testing machine





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