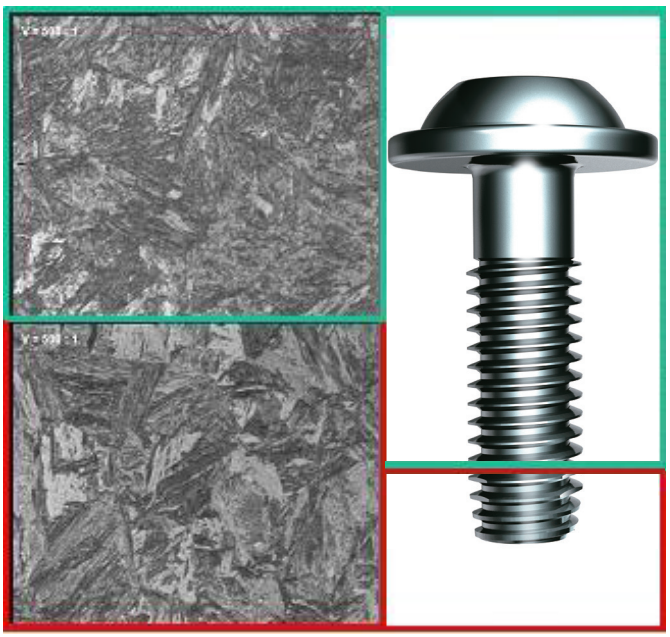
# EJOT® HardTip

Thread-forming screws for direct fastening into steel

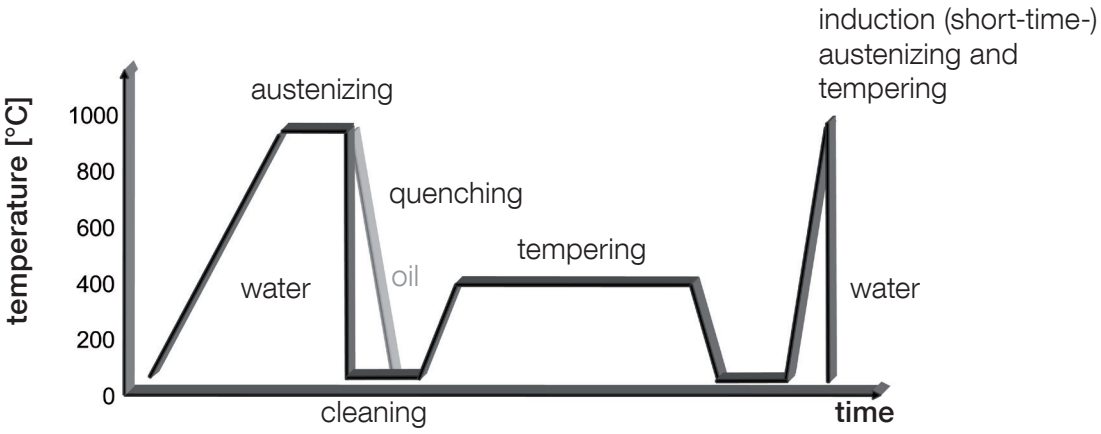
Raw material for the EJOT® HardTip screws is – depending on the application – low alloyed steel according to either DIN EN 10263 T4 or DIN EN 10269, respectively. Through systematic material selection and a production technology which combines the thermal process of through-hardening and tempering with an inductive short-time heat treatment, a screw is produced with a hard thread-forming zone. Additionally, the toughness of the screw head and the load-bearing thread is maintained.



*Microstructures of EJOT® HardTip screws*

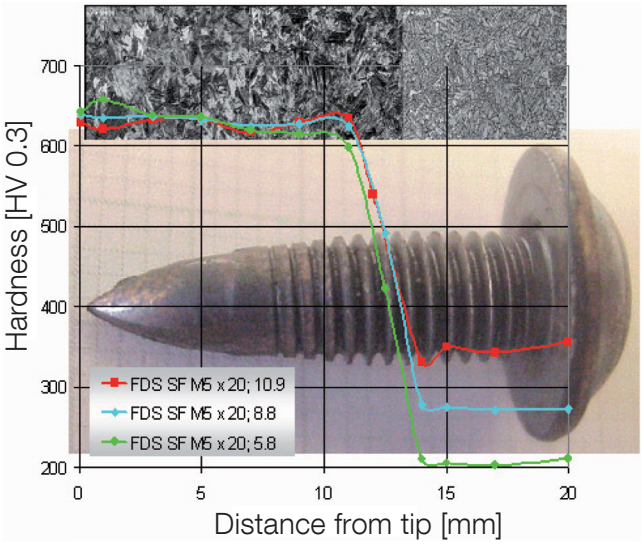
## Hardening characteristics of EJOT® HardTip screws

- Depending on the heat treatment, hardness ranges from 250 to 320 HV (property class 8.8) or from 320 to 380 HV (property class 10.9) can be achieved in the screw heads and the load-bearing threads of all versions of the EJOT® HardTip screw
- EJOT® HardTip screws reach a hardness of more than 450 HV in the thread-forming zone




*Temperature-time characteristic diagram of the EJOT® HardTip heat treatment*

**EJOT. Bringing it together.**




*Distribution of hardness across the EJOT® HardTip screw*

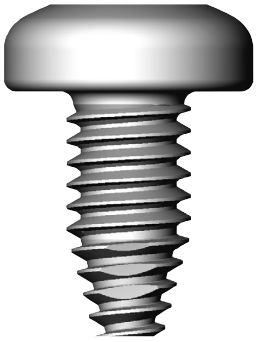
EJOT® HardTip screws are mainly used in the EJOT product groups ALtracs® Plus, SHEETtracs®, FDS® and Spiralform® if case-hardened and tempered fasteners are not permitted or if conventionally heat-treated fasteners fail due to an exceedingly high strength of the mating material.

*EJOT® HardTip FDS®*

*EJOT® HardTip Spiralform®*

## Advantages

- Systematic adjustment of hardness in the forming zone through partial inductive heat treatment
- Hardness of the load-bearing thread according to 8.8 / 10.9
- Prevention of hydrogen retarded embrittlement
- Cost saving through new production technology
- Forming of a metric-compatible thread



*EJOT® HardTip SHEETtracs®*

*EJOT® HardTip ALtracs® Plus*

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