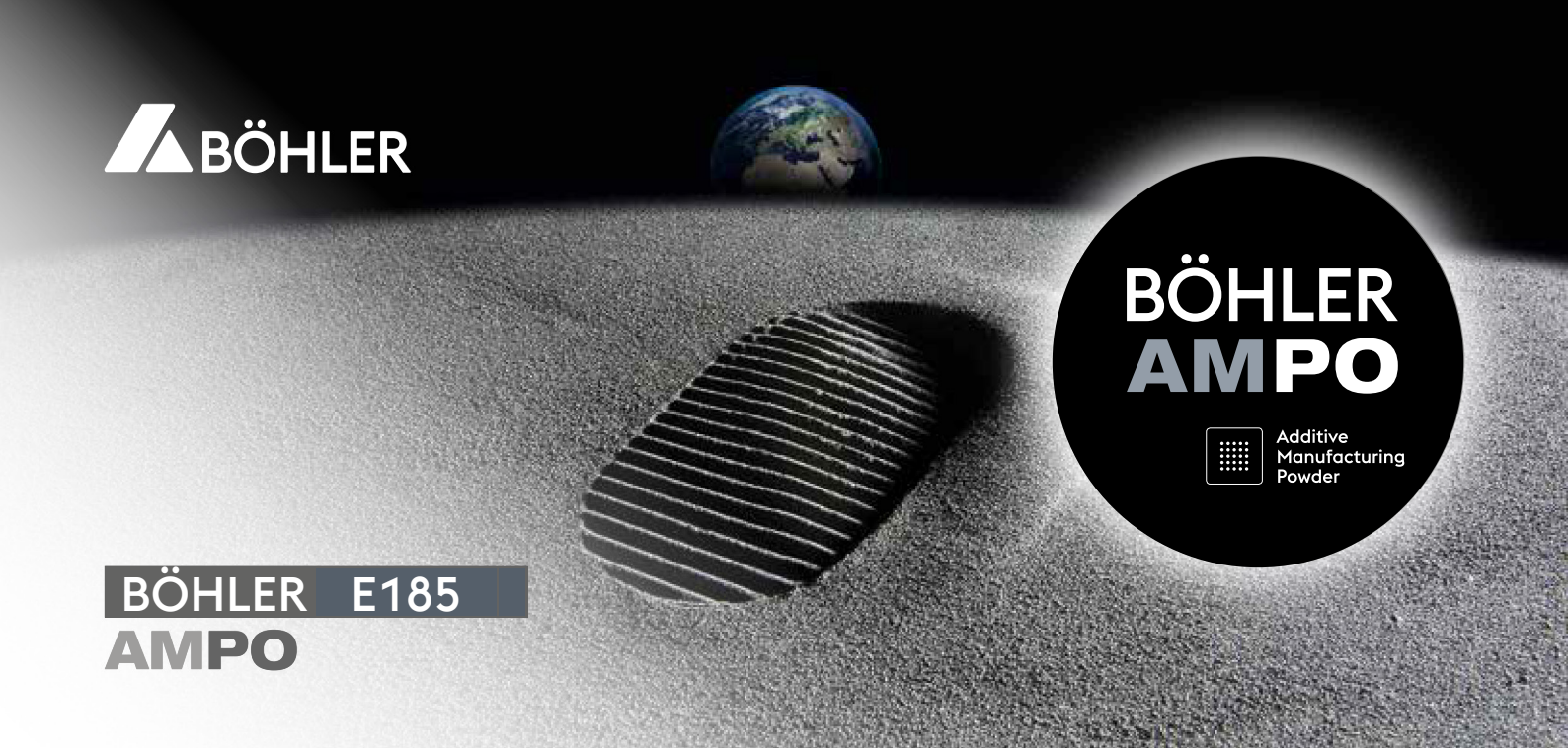


GAS ATOMIZED POWDER FOR ADDITIVE MANUFACTURING

The newly developed, patent pending, BÖHLER E185 AMPO is an AM powder, fulfilling the highest demands from various industries, ranging from motorsport to engineering components and any kind of prototype applications. This low alloyed steel with easy printability and the possibility for surface treatments (e.g. case hardening) was developed especially for the demands of the 3D printing industry.

BÖHLER E185 AMPO
Patent pending

Chemical composition [wt. %]

Element	C	Si	Mn	Cr	Ni	Mo	V	Co-free
Mass - %	0.19	0.22	0.3	0.95	1.25	0.2	0.15	

PARTICLE SIZE DISTRIBUTION 15 - 45 µm

Flowability*	Apparent density*	Sphericity*
3s / 50g (Carney flow)	3.77 g/cm³	0.92

* Measurement of flowability and apparent density are based on ASTM B964 resp. DIN EN ISO 3923-1 and relates to our typical measured values

ACHIEVABLE MECHANICAL PROPERTIES AS PRINTED

Tensile strength	Yield strength	Elongation	Hardness	Impact toughness (Charpy V)
1150 ± 50 MPa	1050 ± 50 MPa	15 ± 1 %	37 - 39 HRc	140 ± 10 J

HEAT TREATED

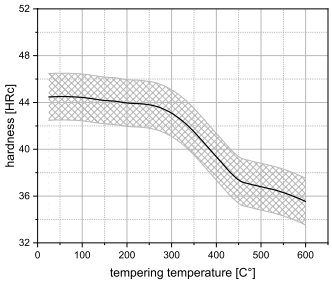
Tensile strength	Yield strength	Elongation	Hardness	Impact toughness (Charpy V)
1370 ± 50 MPa	1150 ± 50 MPa	13 ± 1 %	43 - 45 HRc	85 ± 10 J

HEAT TREATMENT

Hardening	850°C (30 min / water quenched)
Tempering	200°C (2 h / air cooling)

CASE HARDENED

Surface hardness	Case hardening depth
750 ± 20 HV30	0.8 - 0.9 mm



Heat treatment
Hardening temperature 850°C / soaking time 30 min / water quenched; single tempering at mentioned temperatures for 2h / air cooling

After each heat treatment step the material has to cool down until room temperature