AUBERT&DUVAL

STEEL BARS FOR MISSILES

Aubert & Duval has a long history in supplying material to missiles systems manufacturers.
As a leading supplier of defense high performance steels, Aubert & Duval supports missiles manufacturing sector.

Choose the best designed grade for your application

Due to its expertise, Aubert & Duval develops and produces a range of precipitation hardening steels that quite meet the missile producers/designers needs:

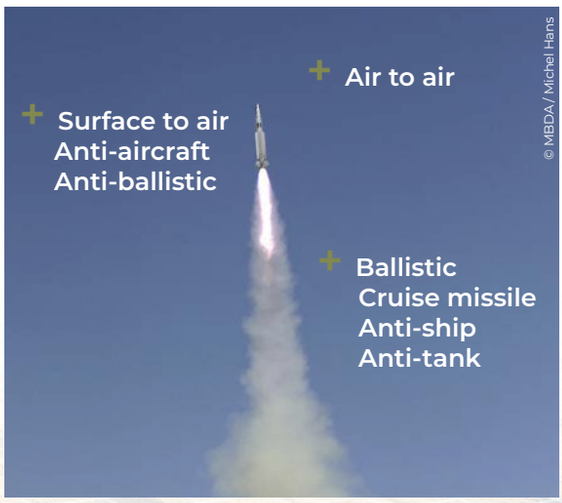
+ High UTS up to 2000 MPa
+ Simple heat treatment
+ Control of distortions during the process
+ Best compromise between UTS and toughness (at room and low temperatures)
+ Welding and flowforming ability
+ Corrosion and stress corrosion cracking resistance

Customer benefits

+ Weight optimization
+ Customized alloys grades
+ A global supplier of the missiles systems manufacturers
+ Technical Support
+ Dedicated R&D Team

Product range

Forged and rolled bars for:



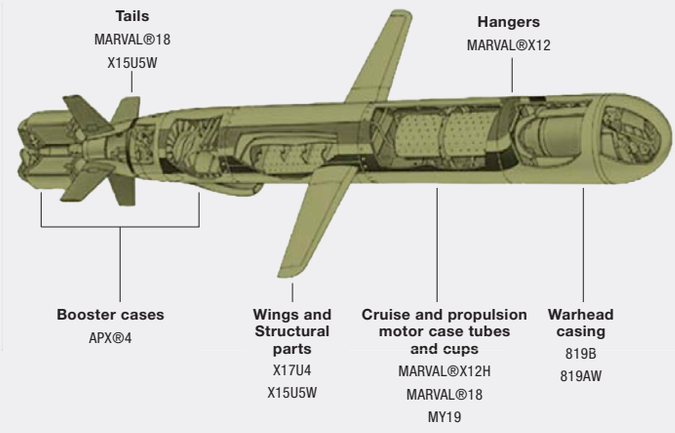
AUBERT&DUVAL

Metallurgical expertise

Precipitation hardening steels are key candidates to fulfill requirements for missiles structural parts such as body, frames and hangers:

+ High static and fatigue properties
+ Best combination of high strength and high toughness (even at low temperature)
+ High stress corrosion cracking performances
+ Suitable for welding and flowforming

High Performance Steels for missiles structural parts



Non stainless steels

	819B	819AW	MARVAL®18	MY19
Type	Martensitic steels		Precipitation hardening steels	
EN designation	36CrNiMo16	36CrNiMo16	Maraging 250	Maraging 300
UTS (MPa)	≥ 1230	≥ 1760	≥ 1720	≥ 1930
YS 0.2% (MPa)	≥ 1030	≥ 1420	≥ 1600	≥ 1860
EI (%)	≥ 8	≥ 6	≥ 6	≥ 5
KV (J)	≥ 25	≥ 17	≥ 15	≥ 12

Stainless steels

	APX®4		X17U4	X15U5W	MARVAL®X12	MARVAL®13X	MARVAL®X12H	MLX®17	
Type	Martensitic steel		Precipitation hardening steels						
EN designation	X4CrNiMo16-5-1		17-4PH	15-5PH	X1CrNiMoTiAl12-9	PH13-8Mo	X1CrNiMoTiAl12-10	X1CrNiMoTiAl12-11	
UTS (MPa)	≥ 950/1050	≥ 1150	≥ 1070	≥ 1070	≥ 1200	≥ 1200	≥ 1400	≥ 1520	≥ 1650
YS 0.2% (MPa)	≥ 700	≥ 900	≥ 1000	≥ 1000	≥ 1100	≥ 1140	≥ 1300	≥ 1380	≥ 1520
EI (%)	≥ 16	≥ 14	≥ 10	≥ 10	≥ 12	≥ 10	≥ 9	≥ 10	≥ 10
KV RT (J)	≥ 120	≥ 100	-	≥ 80	≥ 90	≥ 40	≥ 50	≥ 30	≥ 15
KV -40° (J)	≥ 70	≥ 60 (-30°C)	-	≥ 35(-30°C)	≥ 30	-	≥ 20	-	-

Ni-based alloys

For high temperature applications, Aubert & Duval provides Ni-based alloys::

AD730®

PYRAD53NW (INCO718)