

**Classifications**

EN ISO 18276-A	EN ISO 18276-B	AWS A5.28 / SFA-5.28	AWS A5.36 / SFA A5.36
T 69 6 Mn2NiCrMo M M21 1 H5	T 76 6 T15-1M21A-N4C1M2-UH5	E110C-K4H4	E111T15-M21A8-K4-H4

**Characteristics and typical fields of application**

The BÖHLER alform® 700 L-MC metal cored wire manufactured with seamless laser technology, is developed for shielded arc welding of thermo mechanically produced fine grained structural steels. A balanced metallurgy combined with a very precise production technology results in high strength combined with very good toughness behaviour and excellent welding performance. This tubular wire possesses higher rigidity – as a result it offers exact ignition and excellent feeding characteristic. Due to the manufacturing technology, this metal cored wire ensures low diffusible hydrogen content of <2 ml / 100g weld metal. This metal cored wire is designed for welding under mixture gas (Ar + CO<sub>2</sub>) in PA and PB-position. Good results were also achieved after using alternative gases, 8 – 10 % CO<sub>2</sub> + Ar and different welding positions (PG). This filler material is used for high strength steel constructions, crane and vehicle manufacturing, for ship building, offshore applications and also for penstocks.

**Base materials**

S690 and higher strength grades and thermo mechanically treated fine grain steels up to 690 MPa.  
S690Q, S690QL, aldur 700Q, 700QL, alform® 700 M (wire is especially balanced for this plate steel).  
ASTM A 514 Gr. F, H, Q ; A 709 Gr. 100 Type E, F, H, Q; A 709 Gr. HPS 100W

**Typical analysis**

	Gas	C	Si	Mn	Cr	Ni	Mo
wt.-%	M21	0.07	0.7	1.6	0.35	2.0	0.3

**Mechanical properties of all-weld metal - typical values (min. values)**

Condition	Yield strength R <sub>p0.2</sub>	Tensile strength R <sub>m</sub>	Elongation A (L <sub>0</sub> =5d <sub>0</sub> )	Impact energy ISO-V KV J	
	MPa	MPa	%	-40°C	-60°C
u	770 (≥690)	830 (770-900)	19 (≥17)	130	85 (≥47)

u untreated, as welded – shielding gas Ar + 18 % CO<sub>2</sub>

**Operating data**

	<b>Polarity</b>	DC +	<b>Dimension mm</b>
	<b>Shielding gas (EN ISO 14175)</b>	M21; M20	
		1.0	
		1.2	
			1.6

Preheating and interpass temperature as required by the base metal

**Approvals**

TÜV (19787), DB (42.052.29), DNV, LR, CE