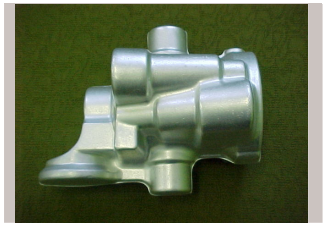
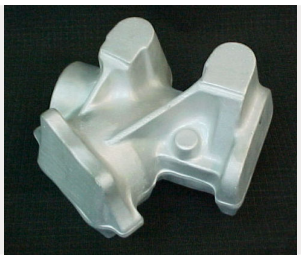
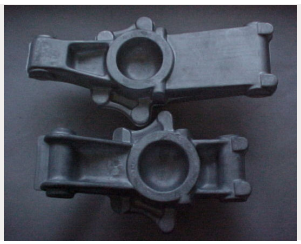
MECHANICAL PROPERTIES AND APPLICATIONS OF FORGINGS MADE BY ZOP Co. OF ALUMINIUM ALLOYS FOR LONGITUDINAL FIBRE DIRECTION AND CROSS- SECTION AREA UP TO 100 mm

EN 573-3	DIN	PN-79/ H- 88026	Condition	Rm [MPa] min.	Rp 0.2 [MPa] min.	A5 [%] min.	Hardness HB min.	Mechanical properties and applications	Examples
EN AW-3103	AlMn1 (3.0515)	PA1 (AlMn1)	0	max. 170	-----	20	max. 40	*Manufacturing and transport equipment for food and chemical industry, welded fluid and gas tanks*	
EN AW-5251	AlMg2Mn (3.3525)	PA2 (AlMg2)	0	max. 226	-----	15	max. 50	*Sea water resistance, god weldability, elements of structures incorporated in aircrafts, ships, buildings, vehicles, equipment for chemical and food industry being subject to medium bads.*	
EN-AW 5754	AlMg3 (3.3535)	PA11 (AlMg3)	0	max. 185	70	15	45	*Construction of ships, vehicles, household goods..*	
EN AW-5019	AlMg5 (3.3555)	PA20 (AlMg5)	0	275	147	15	65	*High sea water resistance, waldable, used for ship structures, in the equipment for chemical industry and transport.*	

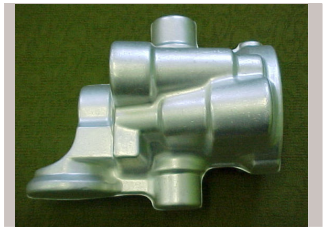
MECHANICAL PROPERTIES AND APPLICATIONS OF FORGINGS MADE BY ZOP Co. OF ALUMINIUM ALLOYS FOR LONGITUDINAL FIBRE DIRECTION AND CROSS- SECTION AREA UP TO 100 mm

EN 573-3	DIN	PN-79/ H- 88026	Condition	Rm [MPa] min.	Rp 0.2 [MPa] min.	A5 [%] min.	Hardness HB min.	Mechanical properties and applications	Examples
EN AW-6082	AlMgSi1 (3.2315)	PA4 (AlMg1Si1Mn)	T4 T6	200 310	100 250	12 5	60 90	*T4 condition is characterised by higher corrosion resistance than T6, weldable, possibility of polishing and anodising. Aircraft and automotive industry, sports and tourist equipment and household goods.*	
EN AW-2017A	AlCuMg1 (3.1325)	PA6 (AlCu4Mg1)	T4	373	196	12	100	*Medium corrosion resistance, highly loaded elements of aircraft structures and of transport means.*	
EN AW-7075	AlZnMgCu1.5 (3.4365)	PA9 (AlZn6Mg2Cu)	T6 T73	510 455	432 386	6 7	135 125	*Very heavily loaded structure elements of incorporated in aircraft structures and in transport means and machines.*	

MECHANICAL PROPERTIES AND APPLICATIONS OF FORGINGS MADE BY ZOP Co. OF ALUMINIUM ALLOYS FOR LONGITUDINAL FIBRE DIRECTION AND CROSS- SECTION AREA UP TO 100 mm

EN 573-3	DIN	PN-79/ H- 88026	Condition	Rm [MPa] min.	Rp 0.2 [MPa] min.	A5 [%] min.	Hardness HB min.	Mechanical properties and applications	Examples
EN AW-2014	AlCuSiMn (3.1255)	PA33 (AlCu4SiMn)	T6	432	314	10	120	*Elements under very high loads incorporated in aircraft structures and in transport means and machines.*	
EN AW-4032	----------	PA12 (AlSi12CuNi)	T6	310	-----	3	110	*Low thermal expansion, abrasion resistance – to be used for piston forgings for engines and for oil pump housings and at increased temperatures.*	
-----	----------	PA31 (AlCu2SiMn)	T6	383	275	10	100	*Aircraft structures.*	

MECHANICAL PROPERTIES AND APPLICATIONS OF FORGINGS MADE BY ZOP Co. OF ALUMINIUM ALLOYS FOR LONGITUDINAL FIBRE DIRECTION AND CROSS- SECTION AREA UP TO 100 mm

EN 573-3	DIN	PN-79/ H- 88026	Condition	Rm [MPa] min.	Rp 0.2 [MPa] min.	A5 [%] min.	Hardness HB min.	Mechanical properties and applications	Examples
-----	----------	PA29 (AlCu2Mg2NiSi)	T6	373	255	4	100	*Higher temperature tolerance to be used at increased temperatures, aircraft structures.*	
EN AW-2618A	----------	PA30 (AlCu2Mg2Ni1)	T6	392	255	5	105	*To be used at increased temperatures, aircraft structures.*	
EN AW-2024	AlCuMg2 (3.1355)	PA7 (AlCu4Mg2)	T4	422	275	10	105	*Medium corrosion resistance, highly loaded elements of aircraft structures and of transport means.*	

Delivery conditions:
0 – after recrystallization annealing,
T4 – after dispersion hardening with natural ageing,
T6 – after dispersion hardening with artificial ageing,
T73 – after dispersion hardening with artificial ageing (two – stage) – good stress corrosion resistance.

APPLIED HEAT TREATMENT

Aluminium alloys – annealing, solution treatment and ageing.

Heat treatment plants are provided with temperature recorder and induced air circulation. The furnaces comply with AMS 2750.

METHODS OF SURFACE CLEANING

Aluminium alloys – etching, vibration grinding and polishing.

APPLIED FORGING EQUIPMENT

- Die hammers - striking energy MPM 3 150, 6 300, 10 000.
- Forging presses - capacity [T] 160, 250, 400.

CHARGE MATERIAL HEATING

Electrical furnaces with controlled and adjustable heating temperature and with induced air circulation.