Selection of filler metals (The filler types are shown in table n° 1)

Selection of the filler metals within each box
(The figure in this table relate to the type numbers in table 1)
First line : Optimal physical properties
Second line : Optimal corrosion resistance
Third line : Optimal welding characteristics

Base Material A / *Matériaux de base A*	Al	AlMn	AlMg < 1%[a]	AlMg 3%	AlMg 5%[b]	AlMgSi[c]	AlZnMg	AlSiCu < 1%[e,f]	AlSiMg[e]	AlSiCu[e,f]	AlCu[c]
Al	4 1 4										
AlMn	4 or / 5 1 4	4 - 4									
AlMg < 1%[a]	4 or / ou 5 1 4	4 4 4	4 4 4								
AlMg 3%	4 or / ou 5 5[d] 4 or / ou 5	5 5[d] 4	5 5[d] 4	5 5[d] 5							
AlMg 5%[b]	5 5 5	5 5 5	5 5 5	5 5 5	5 5 5						
AlMgSi[c]	4 or / ou 5 5 4	4 or / ou 5 5 4	4 or / ou 5 5 4	5 5 4	5 5 4	4 or / ou 5 5 4					
AlZnMg	5 5 5	5 5 5	5 5 5	5 5 5	5 5 5	5 5 5	5 5 5				
AlSiCu < 1%[e,f]	4 4 4	4 4 4	4 4 4	4 4 4	4 4 4	4 4 4	4 4 4	4 4 4			
AlSiMg[e]	4 4 4	4 4 4	4 4 4	4 4 4	4 4 4	4 4 4	4 4 4	4 4 4	4 4 4		
AlSiCu[e,f]	4 4 4	4 4 4	4 4 4	4 4 4	4 4 4	4 4 4	4 4 4	4 4 4	4 4 4	4 4 4	
AlCu[c]	[g]	[g]	[g]	[g]	[g]	4 4 4	4 4 4	4 4 4	4 4 4	4 4 4	[g] [g] 4
Base material B / *Matériaux de base B*	**Al**	**AlMn**	**AlMg < 1%**	**AlMg 3%**	**AlMg 5%**	**AlMgSi**	**AlZnMg**	**AlSiCu <1%**	**AlSiMg**	**AlSiCu**	**AlCu**

Remark 1 : In case the base material alloys contain ≥2% Mg and welding is done with filler metals of the type AlSi5 or AlSi12 (or when the base materials contain ≥2% and welding is done with filler metals of the AlMg5 type) then sufficient Mg2Si precipitations can be formed at the fusion line to give a brittle joint. These combinations are not recommended for dynamically or shock stressed structures. If the alloy combination cannot be
Remark 2 : These base materials are listed according to their chemical composition without reference to cast or wrought materials.

[a] By welding without a filler metal, these alloys are prone to solidification cracking. Precautions can be taken by the use of clamping devices or by increasing the Mg content in the weld up to more than 3%
[b] At certain environment conditions, for ex. operation temperature ≥65°C, alloys with a Mg content of more than 3% may be prone to intercristalline corrosion and/or stress corrosion. The susceptibility increases with rising Mg content and/or cold hardening. The effect of weld metal dilution should be taken into consideration.
[c] These alloys are not recommended for welding without filler metals due to their susceptibility of cold cracking.
[d] The resistance against intercristalline corrosion and stress corrosion of type 5 according to table 1 is increased when the Mg content does not exceed 3%. At environment conditions, which may cause intercristalline corrosion and/or stress corrosion, the Mg content of the filler metal should be similar to the base material or not significantly higher. Accordingly, this must be obeyed for welding of the base materials with the referring filler metals.
[e] The silicon content of the filler metals should be selected in a way that they match the cast alloy of the base material as good as possible
[f] In case of die-casting, the cast alloys are not weldable due to the high gas content.
[g] Not recommended – not suitable for the base metal.