



Aluminium, **the facts**



Did you know that after iron, aluminium is by far the most widely used metal in the world? This is because aluminium has a unique combination of attractive properties. Many of these are extremely important in our efforts to create a more sustainable society.



The properties of aluminium

The combination of the following properties makes aluminium the optimal material for our products:

- Low weight
- High strength
- Superior malleability
- Easy machining
- Excellent corrosion resistance
- Easy to mill, drill, cut, punch, bend, weld, bond, tape...

Corrosion resistance

Aluminium is an excellent material to use in climate's with high heat and humidity. This is because aluminium reacts with the oxygen in the air to form an extremely thin layer of oxide, just a few hundredths of a micron thick (1 micron is one thousandth of a millimeter). This layer is dense and provides excellent corrosion protection. If damaged mechanically, the aluminium oxide layer repairs itself immediately.

Soil is not a uniform material. Mineral composition, moisture content, pH, presence of organic materials and electrical conductivity, can all vary widely from site to site. These differences make it difficult to predict a metal's durability in soil. As a solution to this problem, Sapa Pole Products makes use of corrosion protection tape around the root section of the column.

Our clients have over 40 years of experience in the use of corrosion protection tape for the ground section of the column. This tape is extensively tested by TNO (a Dutch independent research organization) to make sure that the protection around root/ground level of our column, meets the current European norms for lighting columns; the EN 40-6.

The ground level area of all columns can be liable to damage, for example due to mechanical sweeping, mowing or paving activities. Sapa Pole Products has developed the Ground level protector, which provides optimal protection at ground level around the base of the column. The Ground level protector can either be factory installed by Sapa, or delivered as an accessory, for all Sapa columns. The Ground level protector is supplied in two parts, making it very easy to mount.



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Alloy 6000 series

Pure aluminium is relatively soft. Its strength can be increased by alloying or cold working. Most of the aluminium that is commercially available is therefore alloyed with one or more other elements. The resulting alloy has different properties depending on which alloying elements are added. This makes the choice of alloy an important matter.

Sapa Pole Products makes use of the alloy: EN-AW 6060 T66. Alloy 5000 series are mostly used for ships because of the corrosion resistance in seawater. Alloy 7000 series are mostly used in the airplane industry because of its exceptional strength. The most optimal alloy for lighting columns is logically alloy 6000 series because of its malleability, ageing capabilities, strength, extrusion possibilities and price-level.

The anti-corrosion systems of Sapa Pole Products are extensively tested by TNO (a Dutch independent research organization) to make sure that the protection around root/ground level of our column, meets the current European norms for lighting columns; the EN 40-6