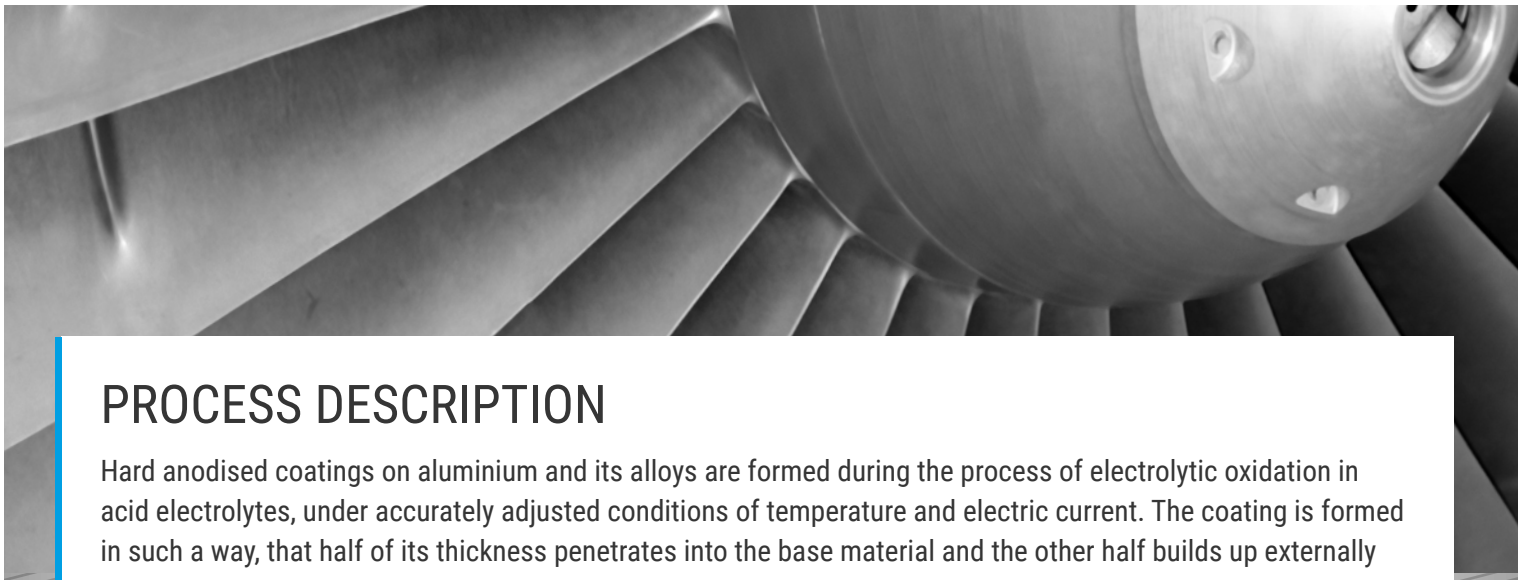
ANODAL®
Od 1985 roku

Hard anodising of aluminium
Steel strength, lightweight of aluminum



PROCESS DESCRIPTION

Hard anodised coatings on aluminium and its alloys are formed during the process of electrolytic oxidation in acid electrolytes, under accurately adjusted conditions of temperature and electric current. The coating is formed in such a way, that half of its thickness penetrates into the base material and the other half builds up externally

RESULT

When compared to conventional anodised films, coatings formed during the process of hard anodising are much thicker, which demonstrate much better resistance to wear. Depending on the type and condition of the base material, the achievable thickness of hard anodised films may range from 25 µm to 250 µm. Colours of hard anodised coatings depend on types of the base material and thickness of the built-up film. Generally, the colours include various shades of brown and grey. With very thick coatings, it is also possible to achieve black colour of the film.

PROPERTIES OF HARD ANODISED COATINGS

- Very high resistance to wear and abrasion.
- Perfect resistance to corrosion (1000 to 1500 h in a saline chamber).
- Excellent hardness (380-550 HV 0.025).
- Optimum antifriction properties.
- High resistance to electric breakdown (1500 V at the film thickness of 50 µm).
- Resistance to high temperatures (up to 2000°C at short-term exposure).
- Excellent properties of thermal insulation (1/10 to 1/30 of thermal conductivity demonstrated by the base material).

SUBJECT TO THE PROCESS

The properties and appearance of the oxide coating mainly depend on the base material (type of alloy and degree of aluminium hardening – table), the method of manufacturing and preperation of the product surface.
NOTE: If the alloy type and condition are incorrectly defined, the components may be damaged.

SPECIALISED INDUSTRIES

Hard anodising is often used in specialised industries:

- Pneumatic and hydraulic cylinders
- Pistons and injection moulds
- Valves, nozzles and belt pulleys
- Chirurgical instruments
- Toothed transmission gears
- Heating plates
- Household equipment
- Automotive industry
- Aviation industry