

# Technical Resources

Nano-Ceramic Pre-Treatment  
for Exterior Luminaires

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## Pre-Treatment

Robust, long lasting finishes for exterior luminaires in harsh environments are engineered through the use of a 9 stage treatment process prior to powdercoating. This multi-phase process is implemented prior to conversion coating to guarantee that there is no deviation in the surface quality of the base material.

IILUS employs environmentally friendly and hazard free Zirconium (Zr) conversion coating. A nano scale ceramic film (20~50 nm) is formed on the aluminum surface from a ceramic agent based on Zirconium salt. As there are no heavy metals, phosphates or organic volatile components involved in the process, almost no sediment will be present during the film-forming reaction.

During the ceramic film forming process parameters such as purity, pH value and temperature are regularly monitored and recorded in each stage, so as to guarantee quality assurance.

## Powder Coating

Strong weather resistance and mechanical properties are standardised in all outdoor powder coat material. Normally a thickness of 60-90µm of powder will be applied followed by chamber curing at around 200°C. This coating standard has acquired QUALICOAT Class I certification and is a recognised component (UL approved) for non-metallic finishes. During the process parameters such as temperature and thickness are regularly monitored so as to guarantee that all of our products meet minimum quality requirements.

## Testing & Results

A harsh 3000 hour Filiform test has been undertaken to evaluate the quality of IILUS products under severe corrosive environments.

	Longest Filament	Average Length of Filaments	Number of Filaments
Standard	≤ 4mm	≤ 2mm	≤ 20
IILUS	≤ 2mm	≤ 1.5mm	≤ 2

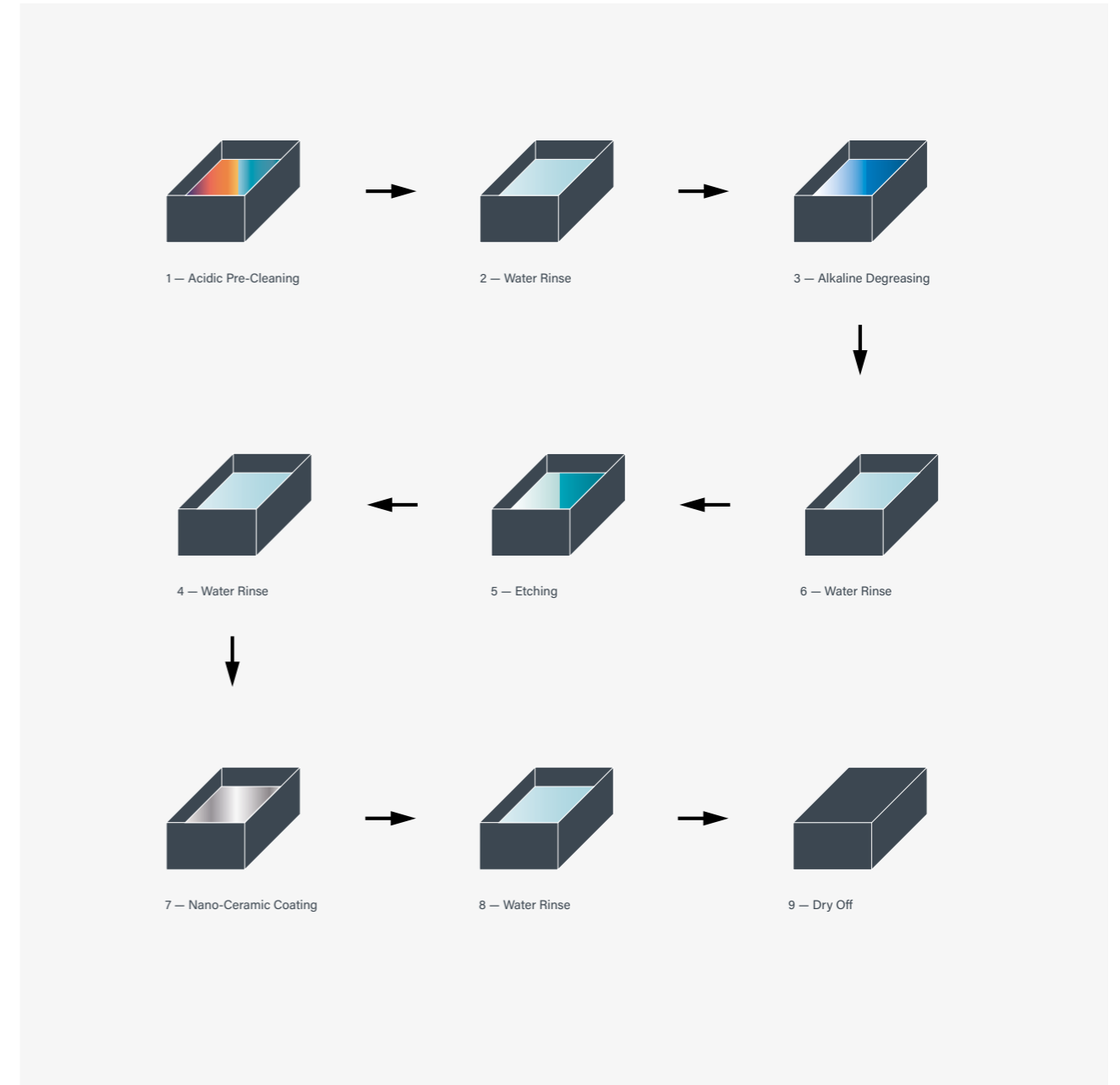


Figure 1 — Nano-Ceramic Film Forming Process

Elegantly Engineered

IILUS