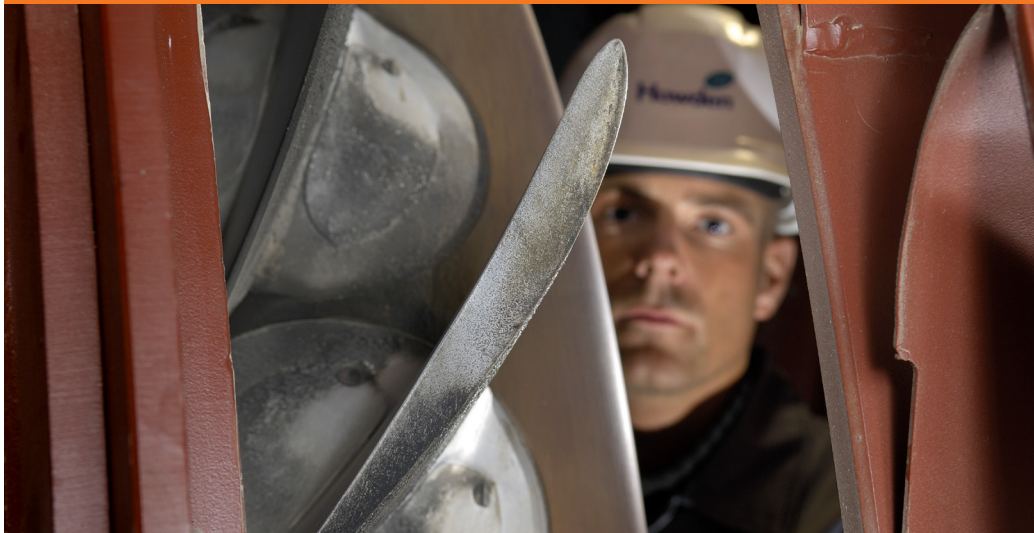


Upgrade of blades: Materials and coating



As time goes by, new demands for extended service intervals, might arise and unforeseen operating conditions could cause more wear of the fan blades than first expected. One solution may be to upgrade the blade material or coating.

For many fans it is possible to upgrade the blades either by the installation of new blades with a coating, which protects the blades from erosion, or from a new material. No matter the reason, the result will be a life extension of the blades.

Types of blade upgrades

By default, our PA (Primary Air) and FD (Forced Draft) fans are equipped with aluminium blades and the ID (Induced Draft) / booster fans are made of ductile iron, steel or high alloy steel.

Since 1995, most ID / booster fans have been supplied with medium pressure profiles made of aluminium with erosion protection.

For most fans, the blades can be upgraded, depending on the hub and blade type. The various possible upgrades can be divided into the following groups:

Change to a new blade material

Coating or anodizing the blades (anodizing only for aluminium)

Equipment of the blades with an erosion protection (medium pressure profiles with a straight leading edge)

New blade material

The blade materials and the manufacturing methods have been improved over the years. The advantage of changing to a new blade material is partly the better quality of the material and the higher resistance to corrosion and erosion.

Howden supplies a range of shovel materials, including:

Cast aluminium

Forged aluminium

Nodular cast iron

ADI nodular cast iron material

Cast steel

Forged steel

Stainless steel forged

Stainless steel

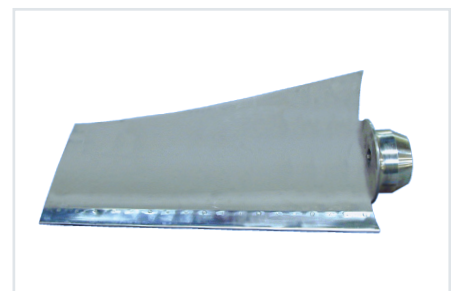
High-alloy steel (nickel alloys)



The blade material ranges from aluminium, nodular cast iron, cast steel to nickel alloys.



Blades - TLT



Blade profile provided with erosion shield

Revolving Around You™

CIN: U31401MH2010PTC204403

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Coating and anodising

Coatings are used to prevent abrasive wear caused by dust and corrosion, thus extending the service life.

The coatings used are chromium carbide or tungsten carbide.

The anodizing is only used with aluminium blades, whereby the special property of the aluminium is used to form an oxide layer which protects against corrosion.

Erosion shields

The anti-erosion protection can be applied to the leading edge of the blades and can be used in all medium pressure profiles.

The erosion protection is made of 1.5 mm thick, hard chrome-plated stainless steel.

The erosion protection extends the lifetime of the blades by reducing the wear on the blades.

Howdens program for the calculation of the blade life

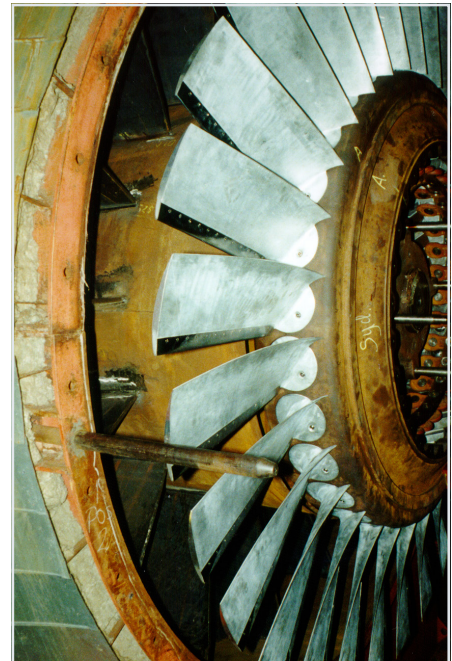
L&T Howden calculate the wear and life of the blades based on the specific particle distribution of your fan.

Based on laboratory and practice tests, we have developed the blade life calculation program. These tests combined with our sixty years of experience make the calculation program reliable and effective.

The calculation gives you the expected life of the blades for different types of materials and coatings, using our own specific particle distribution.

Whatever you need, we offer a wide range of blade materials and coatings that meet your requirements and tailor-made solutions for your specific application.

We can not free your fans from the heavy dust, but we can help them reduce the impact on the blades. This reduces spare parts costs and downtime.



Blades in new material mounted on existing hub

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