

Powder Compaction



Sintered structural components are steel parts manufactured using the Powder Metallurgy technology in which a compacted mixture of metal powders is sintered. This technology is used to obtain structurally functional metal parts with complex shape.

The parts produced are widely used in mechanical or hydraulic equipment particularly in the demanding automotive sector and in large series industrial markets.

PROCESS OF POWDER COMPACTION

The Powder Metallurgy technology used to manufacture sintered structural components consists in compacting a mixture of metal powder and sintering the compacts in a furnace using a controlled temperature and atmosphere.

Advantages of sintering: Powder Metallurgy is highly valued in industry to produce parts with complex shape such as teeth, splines, profiles and non-axisymmetric shapes which can be produced directly from tool without machining. Other important aspects are the very high dimensional accuracy and excellent surface finish provided by sintering.

The dimensional stability of the components during the manufacturing process is a direct function of the durability of the tooling which depends on its geometry and the pressure applied to it. Erasteel provides a wide range of Powder Metallurgy the ASP® grades able to solve the issues that occur during the production. Erasteel offers the wider range of Powder Metallurgy grades for the powder compaction process. Following the shape of the tools with sharp edges or with complex geometry the toughness is a key factor, the wear resistance combined with a good toughness is a plus when large production volumes is planned, the high pressure and abrasive powders are also factors to take into account when selecting the grade. Galling and adhesive wear can be solved also by the selection of the right grade.