

Plastic Injection



Injection moulding is a production process used to manufacture thin walled plastic parts for various applications such as household appliances, consumer electronics, powder tools, optical, medical parts, technical pieces in automotive industry, packaging and food industry.

Plastic moulding is often a massive production method that suit to long series. The produced plastic parts can be very complicated and thereby moulds are expensive.

HIGH-SPEED STEEL & TOOLS STEELS

Tools steels which are used as mould materials have to reach a sufficient level of:

- > **strength and hardness:** due to high injection and closing pressure,
- > **toughness:** cavities with complicated shapes, small radius, thin walls, sharp corners,
- > **wear resistance:** in case of long series and abrasive plastics with high filler contents,
- > **corrosion resistance**
- > **cleanliness:** to ensure a very good polishability when high surface finish is needed on the plastic part.

SELECTION OF ASP® FOR PLASTIC INJECTION

In this case, the H13 type is not the optimal solution to resist abrasion or deformation and indentation.

ASP® 2012 can increase a lot the performance of the moulds, thanks to its outstanding toughness level up to 58/60 HRC. ASP® 2012 wear resistance is also much higher compared to H13. Please note also that ASP® 2012 machinability is very good, similar to H13.

Moreover, our grades ASP® 2005 can be used up to 64 HRC in areas which particularly suffer from abrasion and ASP® 2053 is our most wear resistant tool steel recommended as injection point material.

ASP® APZ10 is a Powder Metallurgy corrosion resistant tool steel which can be successfully used in plastic moulds in order to avoid :

- > the corrosion of the working surfaces during production or during storage in humid conditions
- > the corrosion of the cooling channels which lead to a less efficient thermo-regulation and a longer cycle time.

In addition, ASP® APZ10 is able to reach a higher level of hardness, compressive strength and a very good wear resistance compared to AISI 420 and AISI 440C.