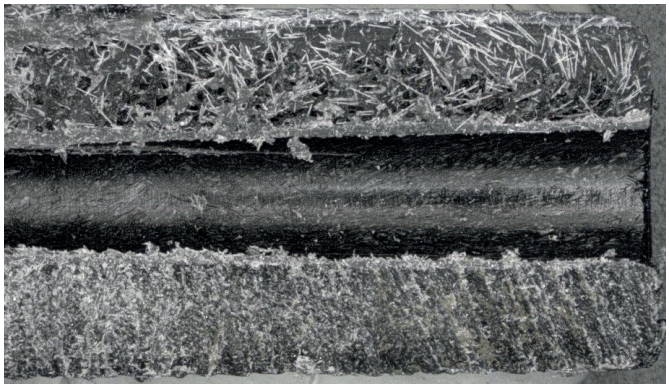
EJOT Cell PT®

Thread-coining screw for cellular foamed thermoplastics

New lightweight design materials

For components made of thermoplastics, which are chemically or physically foamed due to weight and costs reasons, the currently available fastening elements often do not provide the desired fastening safety. For these materials EJOT has developed a special fastening element - the Cell PT® made of through-hardened steel.



Microsection: Boss wall before fastening

Optimised forming through thread-coining

Due to the specially formed thread point in combination with a sophisticated flank angle and radius combination in the threaded area, EJOT has given this new screw a special thread contour. This contour allows thread coining by elastic/plastic deformation inside the plastic boss without damaging the material. The radial stress in the core hole is absorbed by the cellular boss wall, the dense outer layer is preserved.

Microsection: Boss wall after fastening

Benefits of the EJOT Cell PT® screw

- Easy fastening with standard screwdrivers
- Effortless positioning even when the screw is tilted
- Compact skin layer in the core hole kept undamaged
- Higher stripping torque through blind hole fastening
- One screw length for different installation / hole depths
- Repeat assembly possible
- Also available in plastic material

Extensive testing

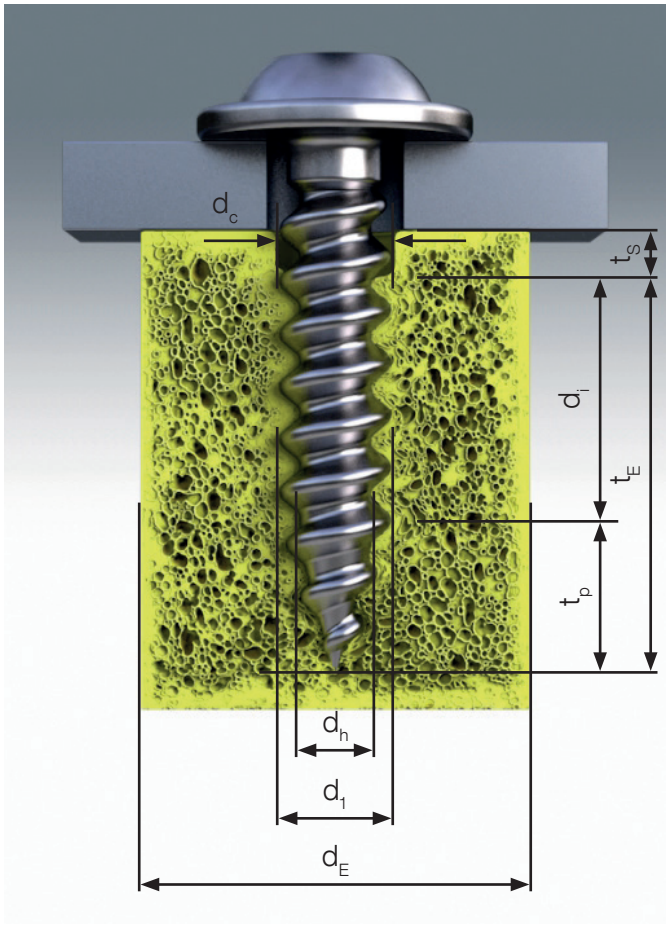
The special thread contour was developed for cellular foamed thermoplastics and the functionality was confirmed in a comprehensive test series. In the case of blind hole screw joints, the specially formed point penetrates into the plastic material at the bottom of the blind hole and a further increase of the torques is achieved.

Screw point not engaged

Screw point in the bottom of the blind hole

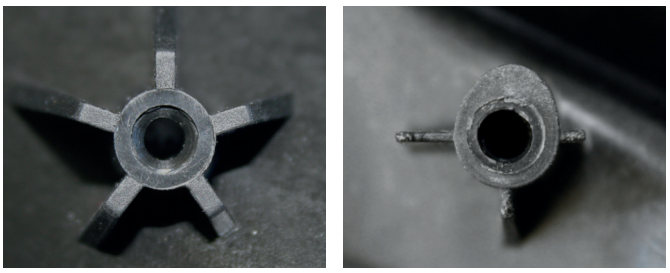
EJOT. Bringing it together.

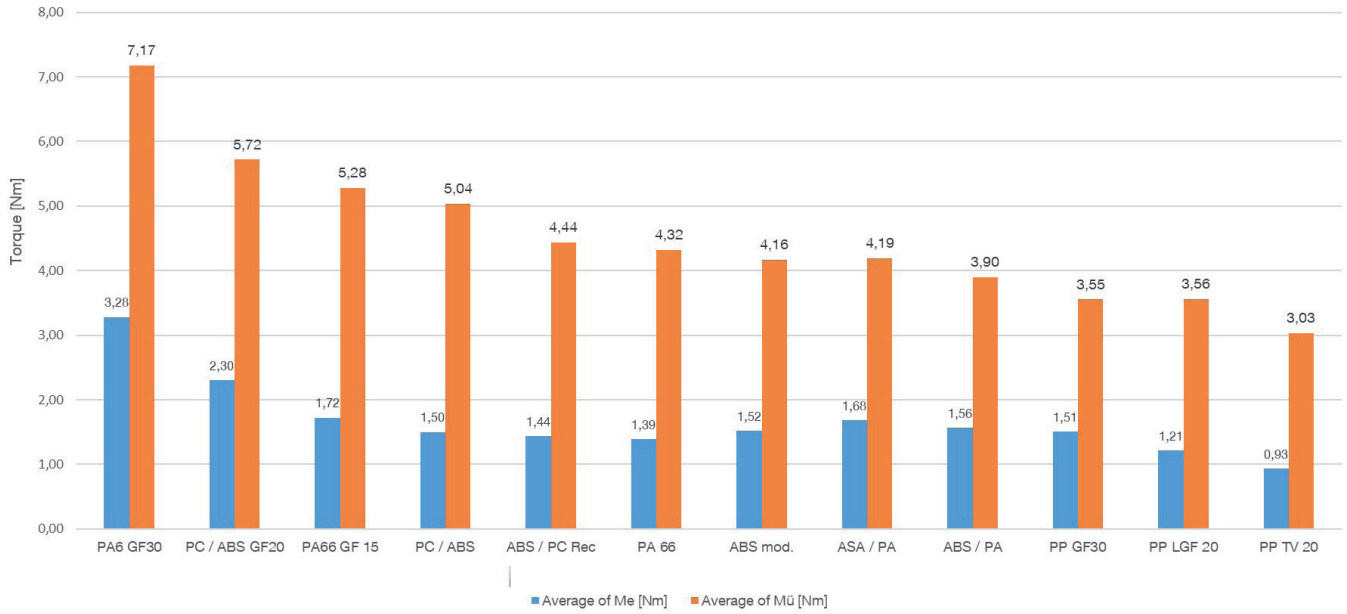
Design recommendation EJOT Cell PT®



d_1 = nominal screw Ø
d_E = external boss Ø (2 x d_1)
d_c = counterbore Ø
d_h = hole Ø (0.65…0.8 x d_1)
t_S = counterbore depth (0.1…0.4 x d_1)
d_i = installation depth (2 x d_1)
t_p = point length (≈ 1.5 x d_1)
t_E = depth of engagement (3 x d_1)

Examples for possible boss versions



Boss with ribs, circular or oval external diameter

Possible installation and stripping torques of the EJOT Cell PT® 45 x 22/18 with the above-mentioned design recommendation (d_i = 12.6...15.3 mm, d_h = 3.0...3.3 mm)