

In contrast to coil coating, in the case of piecework coating one can assume that pretreatment and lacquering are carried out on **parts that have already undergone bending**.

Subsequent bending or forming is not usually carried out. If, contrary to expectations, bending is carried out, deterioration in the corrosion protection is to be expected as a result of deformation of the lacquer layer.

The bending radii to be used depend on the alloy composition, temper and thickness as well as the coating material used. Rolling direction, thickness of the lacquer coating, deformation speed and deformation temperature also play a part. The corresponding details have to be **agreed** between the lacquer supplier, the coater, the metal fabricator and the client **and specified in the order documents**.

The following prerequisites have to be fulfilled:

- DIN EN 485 Part 2, Section 4, Tables 2 to 34, lists the corresponding bending radii for various aluminium alloys as a function of temper and sheet thickness for uncoated material. These guidelines must be taken into account when deforming piecework-coated sheet.
- For the mandrel bend test, the GSB test for licensing a material (GSB QR AL 631 Part 7.5) specifies a mandrel diameter of
>5 mm for powder and
>2 mm for two-component lacquers
and a 0.7-0.8 mm thick test sheet of AlMg1 alloy.

Bending radii should thus be adapted to the sheet thickness and type of lacquer used.

It is recommended that a trial bending operation be carried out under production conditions.

- Folding should not be carried out any later than four weeks after coating.
- A protective film should be used during bending.
- After bending, the lacquer surface should not show any signs of cracks (evaluation using magnifying glass at 10x magnification).
- In an adhesive-tape tear-off test, there should be no detectable loss of lacquer adhesion in the area of the bend as a result of the deformation of the piecework-coated parts.