

**Visible Surface Demands:**

<b>Class:</b> A	<b>Description:</b> No visible surface demands 'normal quality'	<b>Method of Measurement:</b> Roughness Ra < 3,2 µm. NO visible rejection possible	<b>Contents:</b> Damages, scratches, indentations, abrasion, graphite striping due to the extrusion process, handling, internal transport, packaging, storage and transportation to the customer are acceptable if the roughness is less than Ra 3,2 µm.  Also color differences due to heat treatments are acceptable.	<b>Type of aluminium:</b> Applies to alloys 2000, 3000, 6000 and 7000	<b>Production method:</b> Standard Mifa
<b>Class:</b> B	<b>Description:</b> Anodising Quality	<b>Method of Measurement:</b> Roughness on visible surface: Ra < 1 µm; Rt < 9 µm All other surfaces: Ra < 3,2 µm  NO visible rejection possible	<b>Contents:</b> Visible surface should be discussed before or in the quotation stage No guarantees can be given on a perfect visible surface within the roughness tolerance Even stricter demands need to be stated EXPLICITLY at the drawing and will be part of Class C	<b>Type of aluminium:</b> Applies to alloys 6063, 6005A and 6061	<b>Production method:</b> Class A, extended with:  Parts are not allowed to make contact with each other in any production phase.
<b>Class:</b> C	<b>Description:</b> Strict visual demands	<b>Method of Measurement:</b> Generally speaking Roughness is no criterion on the visual surface On all other surfaces applies Ra < 3,2 µm  Equality, structure and degree of imperfections on the visible surface is important	<b>Contents:</b> <b>1. Main visible and possible secondary visible surfaces must be defined PRIOR TO order acceptance</b>  2. By means of reference samples the approval and disapproval criteria must be determined ( <b>Subjective demands, like cosmetic, are changed to objective demands</b> )  3. Agree upon: colour, structure, gloss level, inspection distance, inspection angle, inspection time, light intensity during inspection, maximum quantity tolerated surface imperfections  4. Most supplementary treatments which are necessary, are cost raising and also demand time, such as scotch brite, extra staining.  5. At extrusion profiles are the positioning of the bridges crucial. In many cases welding lines can become visible when anodized. This requires fine-tuning with the (internal) die buyers	<b>Type of aluminium:</b> Applies to alloys 6060, 6063, 6005A and 6061	<b>Production method:</b> Class B, extended with:  1. Always determine special packaging requirements  2. Standard percentage of rejects is 20%.  3. Extra operation: matt, polishing, blasting, tumbling, consider 100% inspection. Profiles will not be supplied without surface treatment  If possible, anodise on long lengths before any other production step. Anodise at AHC Venlo if possible, to minimise handling.  7. Reduce production steps and consequently handling  8. If the parts will be anodised, always matt etch the parts prior to anodising.

**Sliding surface demands:**

<b>Class:</b> D	<b>Description:</b> Strict sliding surface demands	<b>Method of Measurement:</b> The sliding surface is specifically stated. Ra < 1 µm  On NON-sliding surfaces applies Ra < 3,2 µm  If also visual surface applies, chose Class A, B or C NO visual rejection possible	<b>Contents:</b> Slight damages may be reworked in a way that they are going to be under the surface layer  Surface imperfections, not to be felt with one's finger, are acceptable	<b>Type of aluminium:</b> Applies to all 6000 serie alloys	<b>Production method:</b> Run out surface of the profile to be determined and establish on drawing. On this surface a normal quality is applicable.  This run out surface needs to be sufficient to achieve torsion free products.
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**Sealing surfaces**

<b>Class:</b> E	<b>Description:</b> Strict roughness demands and tight form tolerances	<b>Method of Measurement:</b> The sealing surface will be indicated specifically. Roughness Ra < 0,8 µm RZ < 10 µm	<b>Contents:</b> Cylinder (sealing surface) has to be perfectly smooth and without local imperfections. Every scratch which is deeper than 10µm will be rejected. Roughness has to be measured in visibly bad places. Measurements have to be taken perpendicular to the extrusion direction.	<b>Type of aluminium:</b> Applies to all 6060 and 6063 alloys.	<b>Production method:</b> Demands will only be met at enclosed surfaces, such as the internal of a cylinder. Run out surface needs to be determined and established on drawing. On this surface a normal quality is applicable.  This run out surface needs to be sufficient to achieve torsion free products.
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