
 MEMBER OF  SCHURTER GROUP	PN7-0002	Site: 1 z 5
	Mechanical parts Panels, frames, sheet metals, glasses,	Version: 01 Date: 30.1.2018

Version

Release	Date	Description
00	30.1.2018	First version

CONTENTS

1.	GENERAL	2
1.1.	Scope of validity	2
2.	PARAMETERS OF MECHANICAL PARTS	2
2.1.	Materials of mechanical parts	2
2.2.	Surface finishing of parts	2
2.3.	Direction of rolling	2
2.4.	Edge processing (Edging)	2
3.	FASTENERS INSERTING AND WELDING	3
3.1.	Surface flatness in an area of a fastener heads	3
3.2.	Flatness of mechanical parts	3
3.3.	Perpendicularity of inserted and welded fasteners	3
3.4.	Damage of a visible surface of a mechanical part	3
4.	OPTICAL QUALITY OF SURFACES	4
4.1.	Visible and invisible areas	4
4.2.	Test criteria	4
4.3.	Optical parameters	5

Mechanické dílce	PN7-0002	Strana: 2 z 5
		Vydání: 01

1. GENERAL

1.1. Scope of validity

This norm describes technical and quality requirements of mechanical parts. Mechanical parts are panels, frames, sheet metals, glasses, PCB, etc.

2. PARAMETERS OF MECHANICAL PARTS

2.1. Materials of mechanical parts

Mechanical part	standard material, unless otherwise mentioned
Aluminum panel	AlMg3; Al99,5
Sheet metal	DX51D+Z275-MAC; DC01
Glass	float; white
PCB	FR4;

2.2. Surface finishing of parts

A surface of mechanical parts can be provided by additional surface treatment and passivation such as anodizing, powder and wet coating, galvanized, chromating etc.

The dimensions of mechanical parts shown on a drawing are including a surface treatment and passivation.

Anodizing of aluminum parts

Anodized parts are first pre-prepared (E6="pickling") and then anodized. A result is chemically matted surface. Colors of anodizing are according to "EURAS standard" colors.

Common used color shades:

C0 colorless

C35 black

C8 black/organic

An example of designation: "E6/C0".

Standard thickness of anodizing is $20 \pm 5 \mu\text{m}$, unless otherwise mentioned.

After anodizing must not be seen traces of milling, grinding and another machining. Panels, frames and etc. are supplied grease-free, clean and free of splinters.

Mounting holes or threads (M4) are necessary for fixing during anodized process. Positions of these holes or threads are free on invisible areas. Defects on visible areas are not allowed.

Wet and powder coating

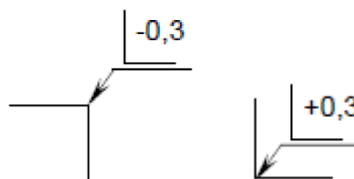
Standard thickness of a lacquer is $0,1 \pm 0,02 \text{mm}$, unless otherwise mentioned.

2.3. Direction of rolling

Direction of rolling is free, unless otherwise mentioned.

2.4. Edge processing (Edging)

Edges are free of burrs that can harm people. The following parameters are valid for machining of inner and outer edges:

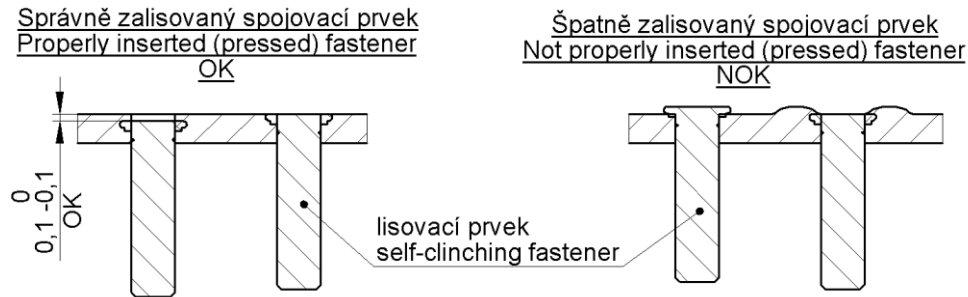


Mechanické dílce	PN7-0002	Strana: 3 z 5
		Vydání: 01

3. FASTENERS INSERTING AND WELDING

3.1. Surface flatness in an area of a fastener heads

Neither a hat of a fastener nor material of a mechanical part must overlap a surrounding material. An inserted (pressed) hat of a fastener can be max. 0,1mm below a level of a surrounding material.

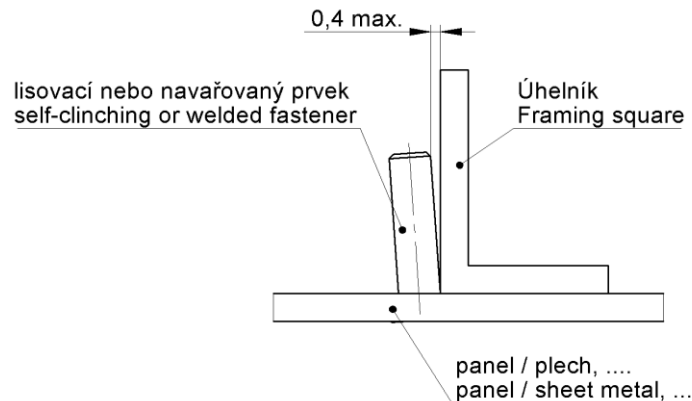


3.2. Flatness of mechanical parts

Mechanical parts has flatness 0,3mm even after inserted (pressed) or welded fasteners, unless otherwise mentioned.

3.3. Perpendicularity of inserted and welded fasteners

The perpendicular tolerance is according to ISO 2768-2, Tolerance class K. Maximal deviation for fasteners into a length 100mm is 0,4mm.



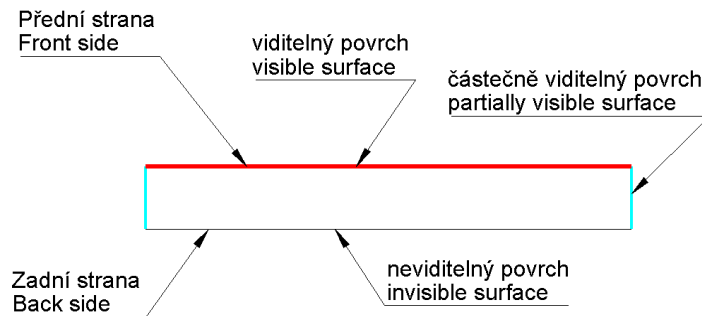
3.4. Damage of a visible surface of a mechanical part

Imprints (foots), cracks and similar defects are not allowed on visible areas or on areas with surface treatment of mechanical parts after inserting (pressing) or welding fasteners.

4. OPTICAL QUALITY OF SURFACES

4.1. Visible and invisible areas

Front face is a visible area, unless otherwise mentioned. Sides are partially visible areas and a back side is invisible area.



Following defects are not allowed on invisible areas:

- Strong scratches that damage a lacquer, a powder and wet coating or an anodized surface of mechanical parts
- unevenness that can be seen after assembling
- pollution (debris residues, contamination)

Viewing angle 90° is valid for partially visible areas in relation to a visible area.

4.2. Test criteria

Inspection personnel

trained, experienced, normally-sighted persons

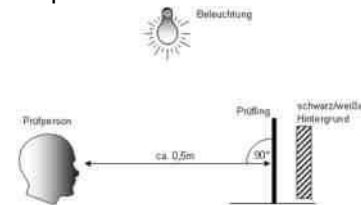
Viewing distance (mm)

500

Viewing angle

90°, mirroring not permitted.

(towards viewing direction)



Illumination

» Impinging light

800-1000 lx normal light D50 or D65

» Transmitted light

Light table

Display window

Inspection against black/white background or upon customer agreement.

Quotation from FACHGEMEINSCHAFT EINGABESYSTEME (FT Quality Directive)

Glasses are optically check against a bright and a dark background.

Mechanické dílce	PN7-0002	Strana: 5 z 5
		Vydání: 01

4.3. Optical parameters

Dirt and dust inclusions spots/fluff/score marks/scratches	Touch (TS / PCT) <i>Class T</i>	standard optical requirements <i>class 1</i>	increased optical requirements <i>class 2</i>
» Max. size (mm ²)	0.32	0.25	0.16
» Weak colour contrast (max. size mm ²)	0.5	0.4	0.25
» Max. no. / 100 cm ²	3	2	1
» Minimum clearance (mm)	50	50	80
	With windows smaller than 100 cm ² , the max. no. of defects applies for the entire window area and as a minimum clearance: Diagonal length (mm) / 2.		
» Lower tolerance (mm ²)		0.063	
Scratches	Assessment such as surface defects with weak colour contrast.		

Quotation from FACHGEMEINSCHAFT EINGABESYSTEME (FT Quality Directive

Vytvořil: M. Dvořáček	Datum:	Podpis:
Schválil: Vedoucí QMS- J. Smejkalová	Datum:	Podpis:
Schválil: jednatel - Ing. M. Brázda	Datum:	Podpis: