**Pitting**
- Scattered spots have dispersed over the majority of the surface.

**HINTS**
- Check if the hardness is too low
- Be sure that marks left from previous polishing step; remaining abrasives
- Clean the workpiece, tools etc. between every polishing step

**Longitudinal recession with GROOVE**
- Use a fluoride-free polishing cloth for pull-outs
- Napless polishing cloths reduce the risk of contamination
- Use lower pressure

**Smaller irregular or circular HOLE**
- Decrease the polishing time (use enough for pull-outs)
- Select a cleaner steel i.e. ESR steel grade
- If the polishing process and the post-process during the manufacturing process,
- Avoid overheating during previous preparation steps
- Avoid embedded abrasives and/or a lubricant with higher viscosity to avoid contamination
- The polishing process

**ORANGE PEEL**
- Fabricated, smooth valleys and raised peaks following the majority of the surface
- Choose a cleaner steel material
- Avoid overheating during previous preparation steps
- Use lower pressure and/or speed during previous preparation steps or other operations.
- Choose steel with homogenous material properties (e.g. without grain clusters in different directions and/or hardness variations)
- Choose a more homogeneous steel grade
- Decrease the polishing time (use enough for pull-outs)
- Use lower pressure

**WAVINESS**
- Fabricated, smooth valleys following the majority of the surface
- Avoid overheating during previous preparation steps
- Use lower pressure and/or speed during previous preparation steps or other operations.
- Choose steel with homogenous material properties (e.g. without grain clusters in different directions and/or hardness variations)
- Choose a more homogeneous steel grade
- Decrease the polishing time (use enough for pull-outs)
- Use lower pressure

**Burn Mark**
- Physical degradation or too low surface hardness during surface preparation, the surface surface three different defects are shown
- Choose a cleaner steel i.e. ESR steel grade
- Use lower pressure
- Use lower pressure and/or speed during previous preparation steps
- Use lower pressure and/or speed during previous preparation steps

**Crack**
- Linear recession with a sharp surface
- Crack result from surface features build-up, use that the cracking is not caused by the manufacturing process
- Compressed air can contain oil or water, avoid this.
- Use a fluoride-free polishing cloth for pull-outs
- Napless polishing cloths reduce the risk of contamination
- Use lower pressure

**Discoloration/ Staining**
- Unintentional microstructure is different
- Avoid overheating during previous preparation steps, avoid heat
- Avoid overheating during previous preparation steps
- Choose a cleaner steel i.e. ESR steel grade
- Use lower pressure
- Use lower pressure and/or speed during previous preparation steps
INTRODUCTION
This chart aims to give an overview of common defect structures, their size/shape and some “hints” to reduce/avoid them.

DEFECT CLASSIFICATION

Inwardly directed imperfection

- Pitting
- Comet tails
- Hole
- Scratches/groove
- Crack

Outwardly directed imperfection

- Relief
- Peak

Areas that appear different compared to the surrounding

- Discoloration
- Haze
- Burn mark

Wavy surface structure

- Orange peel
- Waviness

AVOIDING STRATEGIES

HINTS

- Shorten the polishing time (use enough but short steps)
- Use lower pressure
- Use harder carriers/tool – combination diamond paste and lubricants is important
- Use rotational movements during preparation of the surfaces
- Dry the workpiece and store properly to avoid corrosion attacks on the surface
- If the pitting defects only appear in a local area on the surface it probably due to impurities in the material

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