

Casting Defect Reference Guide

Dataset: Labels Computer Vision Dataset (Roboflow Universe, 9 classes)

Purpose: Vision          

1. Blowholes ()

Defect Description: Gas trapped in the molten metal during casting, forming spherical or irregular cavities. These defects are often found in the upper part of the casting, near the pour spout.  ()  .

Prevention: Use degassing agents, ensure proper pouring technique, and maintain a clean mold.  (± 5 ).

2. Cold Shot ()

Defect Description: A casting defect where a portion of the metal solidifies prematurely due to contact with a cold mold surface, creating a rough, irregular fracture surface.  .

Prevention: Preheat the mold, use insulating materials, and ensure proper pouring technique.  ($+20 \sim 30$ ), /  ,   .

3. Fins (,)

Defect Description: Excess metal that solidifies on the mold wall, creating a fin-like structure. This is often caused by improper pouring technique or a cold mold.  .

Prevention: Preheat the mold, use proper pouring technique, and ensure the mold is clean.    .

4. Flash (,)

Defect Description: Excess metal that solidifies on the mold wall, creating a thin, irregular layer. This is often caused by improper pouring technique or a cold mold. .

Prevention: Preheat the mold, use proper pouring technique, and ensure the mold is clean.   .

5. Misrun ()

Defect Description: A casting defect where the metal solidifies prematurely, resulting in a partially filled mold. This is often caused by improper pouring technique or a cold mold. .

Prevention: Preheat the mold, use proper pouring technique, and ensure the mold is clean.   .

6. Scar (,)

Defect Description: A casting defect where a portion of the metal solidifies prematurely, creating a rough, irregular fracture surface. .

Prevention: Preheat the mold, use proper pouring technique, and ensure the mold is clean.    .

7. Shrinkage ()

Defect Description: A casting defect where the metal shrinks as it solidifies, creating a cavity. This is often caused by improper pouring technique or a cold mold. .

Prevention: Preheat the mold, use proper pouring technique, and ensure the mold is clean.    .

8. Crack ()

Defect Description: A casting defect where a crack forms in the metal, often due to shrinkage or improper pouring technique. .

Prevention: Preheat the mold, use proper pouring technique, and ensure the mold is clean.    .

9. Scratch ()

Defect Description: A casting defect where a scratch forms in the metal, often due to improper pouring technique or a cold mold. .

Prevention: Preheat the mold, use proper pouring technique, and ensure the mold is clean.    .

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 YOLO ■■■■ ■■■■ class■ ('Crack', 'Flash', 'Misrun' ■■) → ■■■: ■■■ ■■■ ■■■ ■■■ ■■■ ■■■ ■■■ ■■■
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