Foundry Moulder interview questions

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What to expect

Foundry Moulder interviews usually combine a site walk-through with a mix of safety, technical and behavioural questions. Employers want to know you can work safely around molten metal, follow procedures and keep casting quality consistent.

- **Safety and compliance:** Questions about WHS procedures, PPE, working around furnaces and molten metal, and emergency response.
- **Technical process:** Questions about sand moulding, core setting, pouring, knockout and inspection, often referring to specific equipment.
- **Quality control:** Questions about defect identification, dimensional accuracy, tolerance and non-conforming castings.
- **Behavioural:** Questions about teamwork, reliability, shift work and handling pressure on the foundry floor.
- **Scenario:** Questions about a pour going wrong, a defect found late or a safety hazard, testing judgement under pressure.
- **Process walk-through:** A request to describe your routine for preparing a mould or pouring metal from start to finish.

Typically a phone screen or short site interview first, then a practical walk-through of the foundry floor with a supervisor. You may be asked to describe your experience with specific equipment, and some employers include a short safety induction or skills test. The interview can be informal, with questions asked while looking at moulding boxes, ladles or finished castings.

1. Walk me through how you prepare a sand mould from a pattern.

Why they ask

This checks your practical understanding of the core moulding process and whether you can sequence steps safely and consistently.

How to structure your answer

Process walk-through: start with pattern placement and sand selection, then ramming, venting, pattern removal, core setting and closing. Mention checks you make at each stage.

Example answer

“First I check the pattern and the drawing so I know the part and any core positions. I place the pattern in the moulding box and fill it with prepared sand, then ram it in layers to get even compaction without soft spots. I vent the sand to let gases escape, strike off the excess and remove the pattern carefully. If the mould needs a core, I set it in the core prints, check alignment, and then close the box. Before pouring I check that the box is properly closed and weighted so it does not lift.”

2. What do you check before pouring molten metal?

Why they ask

This tests your safety awareness and technical understanding of the pour, which is the highest-risk part of the job.

How to structure your answer

Checklist: mould condition, metal temperature, ladle preparation, personal protective equipment, communication with the furnace team, and emergency readiness.

Example answer

“I check the mould first, making sure it is closed, weighted and vented. I confirm the metal temperature is within range for the alloy and section thickness. I inspect the ladle for any moisture or cracks, because any moisture can cause a steam explosion. I put on my PPE including face shield, apron, spats and gloves. I make sure the pouring area is clear of people and water, and I let the furnace team know I am ready. If anything looks wrong, I stop and fix it before pouring.”

3. Tell me about a time you found a casting defect. What did you do?

Why they ask

This looks at your attention to detail and how you handle quality issues, which directly affects customer satisfaction and rework costs.

How to structure your answer

STAR: situation, task, action, result. Describe the defect, how you identified it, what you did with the casting, and what you changed to prevent repeat defects.

Example answer

“In my current role, after knocking out a batch of castings for a mining customer, I noticed shrinkage porosity on a machined face. I tagged the casting and isolated the batch, then reported it to the supervisor. We checked the pouring temperature and riser design, and found the metal had been poured a bit cold. I adjusted my pour rate and made sure the ladle was preheated properly for the next runs. We reworked the affected castings where possible and scrapped the rest. After that, I kept a closer eye on temperature before each pour, and we saw fewer shrinkage defects on that line.”

4. You notice a mould is not properly closed just before a pour. What do you do?

Why they ask

This scenario tests your judgement under pressure and your willingness to stop work when something is not right.

How to structure your answer

Judgement under pressure: stop the pour, assess the risk, communicate with the team, correct the issue, document it, and consider what caused it.

Example answer

“I would stop the pour immediately. A mould that is not properly closed can cause a run-out or a defective casting, and molten metal can escape. I would tell the furnace team to hold, then check the box alignment and weights. If the mould has shifted, I would reopen it, reset the core if needed, and close it again properly. If the sand is damaged, I would remake the mould. After fixing it, I would note what happened and check whether the closing procedure or the box condition needs attention so it does not happen again.”

5. How do you keep yourself and your team safe when working around furnaces and molten metal?

Why they ask

Safety is the top priority in a foundry, and employers want to know you follow procedures and speak up about hazards.

How to structure your answer

Personal practices: PPE, housekeeping, communication, following procedures, and emergency response. Mention specific hazards like moisture, heavy loads and dust.

Example answer

“I wear the right PPE every time: face shield, foundry apron, spats, gloves and hearing protection where needed. I keep the floor clear of water and clutter, because moisture near molten metal is a serious risk. I never rush a pour and I make sure everyone in the area knows when metal is being

moved. If I see a hazard, like a cracked ladle or a blocked vent, I report it straight away. I also know the emergency procedures and where the nearest fire equipment and first aid kit are. For me, safety is about doing the small checks every shift, not just when someone is watching."

6. Describe your experience with sand mixers, moulding boxes and ladles. How do you keep them in good working order?

Why they ask

This assesses your familiarity with the tools of the trade and your approach to maintenance, which affects reliability and downtime.

How to structure your answer

Technical equipment: list the equipment you have used, describe pre-start checks, routine maintenance, and how you report faults. Give an example of a problem you solved.

Example answer

"I have worked with green sand mixers, moulding boxes and hand ladles, as well as overhead cranes for moving heavy boxes. Before each shift I check the mixer for worn blades or blockages, and I make sure the sand consistency is right by feeling it and checking the muller settings. I inspect moulding boxes for cracks or worn pins, and I check ladles for cracks and moisture before use. If I find a fault I tag it out and tell the supervisor so it can be repaired. Once I noticed a ladle lining starting to wear, and we replaced it before it could fail during a pour."