

SAM ADVANCED TRAINING COURSE



ADVANCED TRAINING COURSE
INTERNATIONAL METAL ADDITIVE
MANUFACTURING COORDINATOR

Online Course | November'22 – May'23 | Duration 175 Hours

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[WWW.ADDITIVE.CO.UK/COURSES](https://www.additive.co.uk/courses)

**TECHNOLOGY
CENTRE**
ENTERPRISE IRELAND
IDA IRELAND SUPPORTED

IRISH MANUFACTURE RESEARCH

Brief Recap

Syllabus for CU 15

European
International Metal
A.M. Coordinator







Day 3 Part 1



Wednesday 23rd
Nov 2022

CU 15: PBF-LB Process

SUBJECT TITLES

| | | |
|---------------------------------------|-----------|---|
| PBF-LB Process Principles | 2 |  |
| PBF-LB System – Hardware and Software | 4 |  |
| PBF-LB Parameters | 3 |  |
| PBF-LB Feedstock | 2 |  |
| PBF-LB Consumables | 2 | |
| Post Processing | 1 | |
| Total | 14 | |
| Attendee total workload | 28 | |

Syllabus Learning Outcomes

| Learning Outcomes – CU15: PBF-LB Process | |
|--|---|
| KNOWLEDGE | <p>Factual and broad knowledge of:</p> <ul style="list-style-type: none">– PBF-LB systems– Laser characteristics– Build platform– Powder– Gases– Processable materials with PBF-LB |
| SKILLS | <p>Describe the PBF-LB systems, including the components and their functions</p> <p>Recognise the characteristics of the PBF-LB build platform, feedstock and other consumables</p> <p>Recognise the PBF-LB parameters and the influence of their adjustment on the as built part</p> <p>Recognise the interaction of the process heat source with the feedstock</p> <p>Identify the problems associated with inadequate preparation and setup of the build platform, handling and storage of feedstock and application of the gases used in PBF-LB</p> |

Exam Format

CU 15 PBF-LB Process

Exam form



Time allowed: You only have **60 seconds** (1 minute per question).



Questions are given as single choice usually i.e. only **ONE** answer is the right. answer.



You will have to choose from other incorrect answers.



Example are on the next slide.

Exam Questions

In groups test your knowledge (Breakout Rooms)

Try this exam question together first and three more will follow during the breakout room session

Lasers do not evenly heat the spot area. This causes the melt in the centre of the spot to be hotter than the edges, and causes a difference in viscosity across the melt. This results in a surface tension gradient and sets up a circulating current that moves molten material between the centre of the meltpool and the periphery.

What is the name of this phenomenon?

A Gaussian Distribution

B Marangoni flow (Correct Answer)

C Recoil Pressure

D Capillary Forces

Study Group

Supporting each other's learning a study group will be set up for the group