ACADÉMIE
DE NANTES

Liberté
Égalité
Fraternité

SESSION 2022

BACCALAURÉAT PROFESSIONNEL
ÉPREUVE ORALE SPÉCIFIQUE « SECTION EUROPÉENNE »

SPÉCIALITÉ : Plastiques et Composites

LANGUE : ANGLAIS

SUJET N°2

Durée de l'épreuve : 40 minutes

- Préparation	- 20 minutes
- Présentation de la situation	- 10 minutes
- Entretien sur les activités et travaux effectués dans la discipline non linguistique	- 10 minutes

SITUATION :

You are a technician at **ARDTECH Industries Ltd**, a plastic molding company in Cork, Ireland.

The company also provides a whole range of additional services, such as *pad printing, *ultrasonic welding, assembly work, *packaging and tooling and the manufacture of PVC gates and railings.

You have a meeting with a client who is developing a prototype.

Before producing a large number of parts, he needs your help to choose between injection molding and 3D printing.

Compare the principle of operation of each technique giving the advantages and disadvantages and say which technique you would choose and justify your choice.

Vocabulary :

***plastic molding :** le moulage plastique
***pad printing :** la tampographie
**ultrasonic welding : la soudure ultrason*
***packaging and tooling :** le conditionnement et l'outillage

DOCUMENTS :

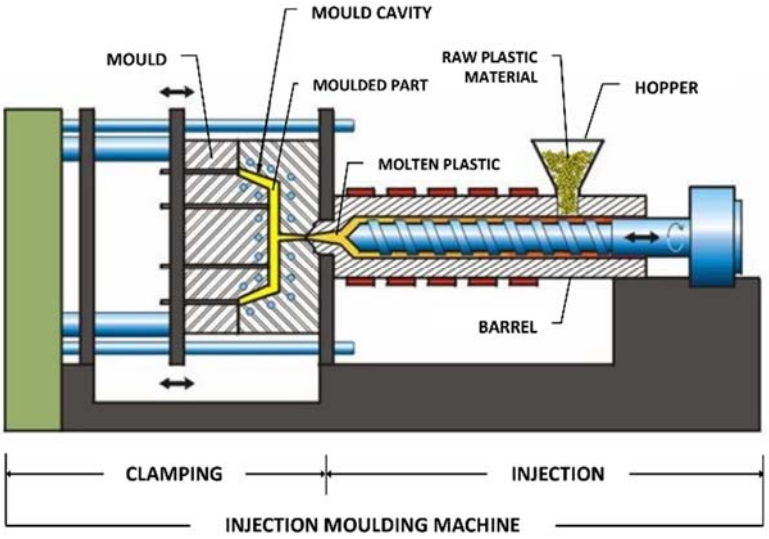
- **DOCUMENT 1 : 3D PRINTING VS INJECTION MOLDING**
- **DOCUMENT 2 : WHEN TO USE EITHER 3D PRINTING AND PLASTIC INJECTION MOLDING**

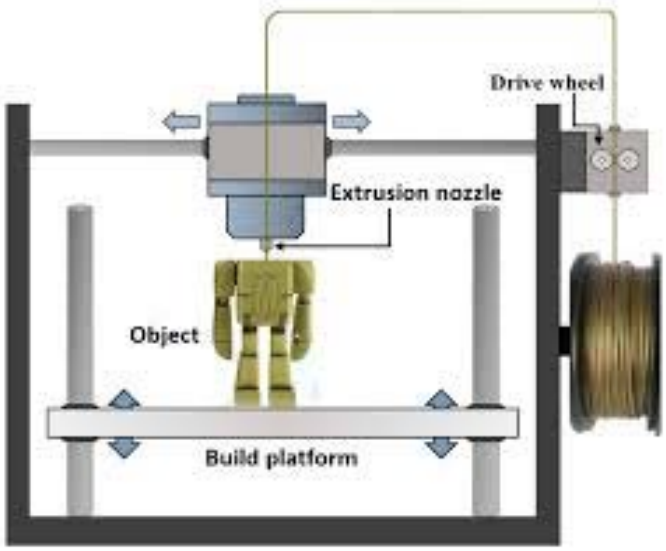
DOCUMENT 1 : 3D PRINTING VS INJECTION MOLDING

A Comparison in Plastics Manufacturing

In today's testing and manufacturing landscape, both 3D printing and plastic injection molding are viable options for producing complex plastic components.

While initially regarded as competing technologies, both techniques are now considered to have distinct advantages and can be used in tandem to optimize production efficiency.

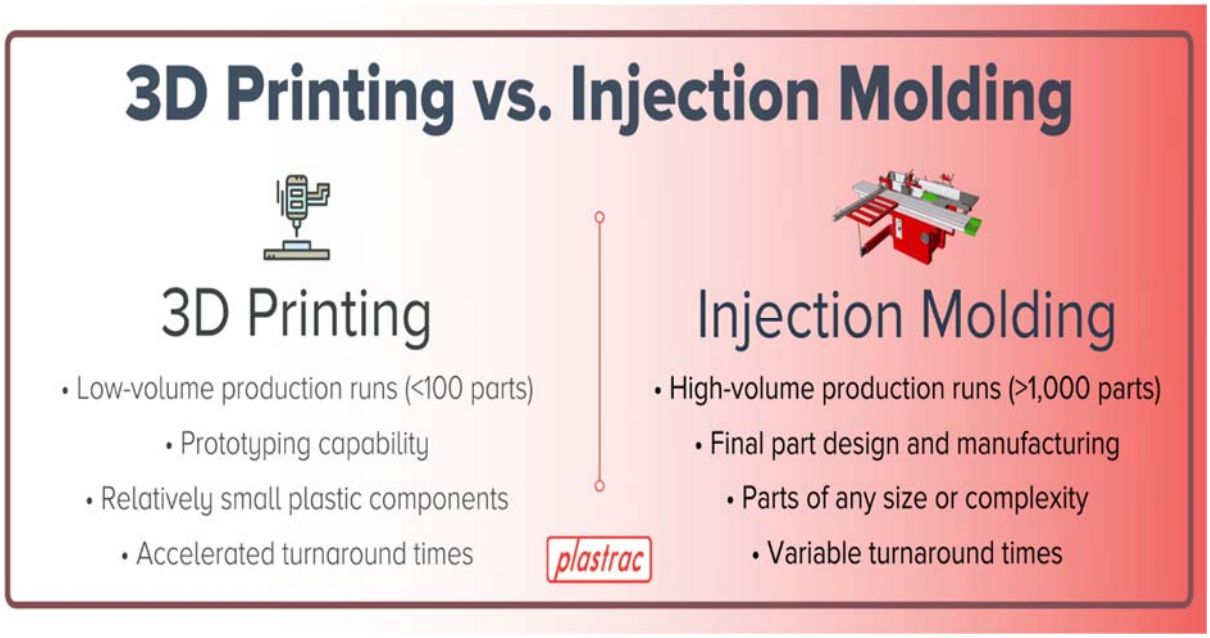




Source : *https://plastrac.com/3d-printing-vs-injection-molding-a-comparison-in-plastics-manufacturing/*

DOCUMENT 2 : WHEN TO USE EITHER 3D PRINTING AND PLASTIC INJECTION MOLDING

Let's take a look at 3D printing and plastic injection molding's value propositions :



Both options are helpful in their own right :

- 3D printing grants engineers the power to create plastic designs in a confined space and bring them to life in a matter of hours.

- Injection molding, on the other hand, reigns supreme for quality and value as it's commonly used to produce high-volume runs of complex plastic designs reliably.

In truth, the majority of today's plastic parts are manufactured with plastic injection molding.

This standard is reasonable, given how the process helps OEMs (original equipment manufacturers) have full control over quality, costs, and design intricacies related to any given project.

Source **:** https://plastrac.com/3d-printing-vs-injection-molding-a-comparison-in-plastics-manufacturing/