

T Level Technical Qualification in Engineering, Manufacturing, Processing and Control

**Employer-Set Project
(8730-034)**

**Task 1
Summer 2023**

Task 1 – Research

To respond to the problem outlined in the brief, the RZY Chief Engineer has asked you to review the project brief and research the specific and general issues which have to be overcome.

You are to conduct research to determine:

- that commercially available wire mesh baskets can be sourced
- that any handles fitted to the wire mesh basket could be removed to ensure that the tank lid can form a close fitting
- the materials the tank can be economically fabricated from and their thickness. These materials have to be capable of being secured together to form an oil tight structure. They must be able to withstand localised high temperatures
- the shape of the tank, as it may be square, rectangular or round, and the method of manufacture must not involve abnormally expensive or complex methods
- the materials that can be used to fabricate a close-fitting lid to the tank
- a suitable handle for the lid. This can be purchased as a commercial off-the-shelf item or fabricated
- a commercially available drain plug that can be fastened to the side of the tank that is oil tight but will allow the oil to be drained using only simple tooling.

Record notes on the findings of your research and initial analysis. Your notes may include:

- volume calculations and initial design sketches
- identification of fixing methods and any potential issues that may result in a design not being oil tight
- downloads or excerpts from OEM catalogues for wire mesh baskets, handles, drain plugs and material data sheets.

The research notes and analysis will typically be 1500 words. You must include a list of your references/sources alongside your research notes. References/sources are not included in the 1500 word count. How well you have planned your research will contribute to marks achieved for this task.

Timing of assessment

- You will have **three hours** to complete the research and record your findings.

Conditions of assessment

- Your research should be completed working alone under supervised conditions.
- You must not share or discuss your work with other candidates.
- You will have access to the Internet to conduct your research.
- Assessment evidence must be handed in at the end of each session for secure storage which cannot be accessed.

What you must submit on completion of this task

- Research notes (typically 1500 words) hard copy or file saved securely (e.g., on memory stick to be handed in)
- List of references/sources/extracts.

Additional evidence of your performance that will be captured for marking

- N/A

Marks available

- 15

Get in touch

City & Guilds Technicals Quality Team

We are here to answer any queries you may have regarding your T Level Technical Qualification delivery.

Should you require assistance, please contact us using the details below:

T: 0300 303 53 52 (Monday - Friday | 08:30 - 17:00 GMT)

E: technicals.quality@cityandguilds.com

W: cityandguilds.com/tlevels

The T Level is a qualification approved and managed by the Institute for Apprenticeships and Technical Education.

Copyright in this document belongs to, and is used under licence from, the Institute for Apprenticeships and Technical Education, © 2023. 'T-LEVELS' is a registered trademark of the Department for Education. 'T Level' is a registered trademark of the Institute for Apprenticeships and Technical Education. 'Institute for Apprenticeships & Technical Education' and logo are registered trademarks of the Institute for Apprenticeships and Technical Education.

We make every effort to ensure that the information contained in this publication is true and correct at the time of going to press. However, City & Guilds' products and services are subject to continuous development and improvement, and the right is reserved to change products and services from time to time. City & Guilds cannot accept responsibility for any loss or damage arising from the use of information in this publication.

City & Guilds Limited. All rights reserved. City & Guilds is a trademark of City & Guilds Limited, a company registered in England and Wales (company number 16513878). City and Guilds Group Giltspur House, 5–6 Giltspur Street London EC1A 9DE.