**Level 3 Diploma in Work-based Land-based Engineering Operations**

Unit 600 Task A: Use Calculations

(This task uses load, force & friction)

**PROFORMA 9 TITLE: COEFFICIENT OF FRICTION**

**Introduction**

 

The pictures above show a spring balance being used to measure the force required to pull a known weight (vice) over two different surfaces.

The formula used to calculate the coefficient of friction was demonstrated during the presentation (p26) and is reproduced here:

$$µ=\frac{F}{W}$$

**Task**

With the supplied weight and spring balance…

A. Place the weight on a workbench and measure the pulling force required to drag the weight at a constant speed over the surface.

B. Now place the weight on the wooden ramp and measure the pulling force required to drag the weight at a constant speed along the surface.

C. Finally place the weight on the concrete floor and again measure the pulling force required to drag the weight at a constant speed over the surface.

Record your readings over.

D. From the measurements taken, calculate the coefficient of friction (*µ*) of each of the three surfaces.

TRAINEE:............................................................................... DATE: ……………………..

1. **Workbench**

|  |  |
| --- | --- |
| **Weight (kg):** | **Constant pulling force (kg):** |

1. **Wooden ramp**

|  |  |
| --- | --- |
| **Weight (kg):** | **Constant pulling force (kg):** |

1. **Shop floor**

|  |  |
| --- | --- |
| **Weight (kg):** | **Constant pulling force (kg):** |