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How to calculate Quantity for plaster

Given:-

- ✓ 3 meter height
- ✓ 5 meter wide
- ✓ Thickness of the plastering = 15mm or 0.015m

Required: - Quantity for plaster



Solution

V = Height x width x thickness

3 meter x 5 meter x 0.015 meter = 0.225 m^3

- ➢ Dry volume of plaster =0.225m^3

To find wet volume of the plaster

Wet volume of the plaster =1.54 x dry volume

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- ✓ It's the recent formula it was 1.4 the recent is 1.54 it varies from country to country in our country Ethiopia ET there is poor waste management due to absence of adapting management tools like lean construction ,kaizen..... etc. that's why cost of most projects are 200% of initial budget

- ❖ 10% shrinkage (0.1)
- ❖ 44% wastage (0.44)

It counts up 54% which is 0.54

Volume of wet plaster =1.54 X 0.225m^3 =0.346 m^3

Volume of wet plaster = 0.346m^3

Let's find the volume of sand and cement

To find the volumes of sand and cement we have to know the ratio of plaster it (1:4)

Ratio= 1:4 (means 1 cement and 4 sand)

It adds up 5

1 + 4 = 5

- ➢ volume of cement

1/5 x 0.346m^3 = 0.07m^3

- ❖ Bag of cement

Bag of cement = 0.035m^3

Number of bag of cement = 0.07m^3/0.035m^3 = <u>2 bag of cement</u>

- ➢ Density of cement = 1440kg/m^3

Mass of cement = density x volume

Mass of cement = <u>100.8kg</u>

<u>Volume of sand</u>

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4/5 x 0.346 m^3 = 0.276m^3 let's take 0.28m^3

Volume of sand = 0.28m^3

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