

Calculate the quantity of paints!

- Given that **1000 microns** (μm) equal **1 m²/liter**.

S.P.P.



Services Marine & Petroleum



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Calculate the quantity of paints!

Calculating standard quantities (STD QTY)

Example: **Jotamastic 80 JOTUN**

Required: thickness of 175 microns (μm).

Look at the data sheet for the product

Product data

Property	Test/Standard	Description
STANDARD GRADE		
Solids by volume	ISO 3233	80 \pm 2 %
Gloss level (GU 60 °)	ISO 2813	semi gloss (35-70)
Flash point	ISO 3679 Method 1	35 °C
Density	calculated	1.5 kg/l

Solids by volume = 80%

STD Qty of Liter for 1000 m²

STD Qty = Area / Paint Rate

Paint Rate = 1000 microns (μm)/WET

WET = DFT / Solids% = 175 / 80% = 218.75 microns (μm)

Paint Rate = 1000 / 218.75 = 4.75 m²/Liter

STD Qty = Area / Paint Rate = 1000 / 4.75 = 210.52 Liter

Calculate the quantity of paints!

Calculating actual quantities (Act Qty)

Act Qty = Area / Paint Rate – (Paint Rate * Loss Factors)

Loss factors LF

There are many factors that affect the loss, but we will focus on the most important factors that represent the largest and most important percentage (size of surface - wind speed & Height).

Surface size	Example	Loss% Low wind speed Up to 8 Km/h	Loss% medium wind speed and Height 8: 16 Km/h
Flat	Flat steel sheets	25% - 30%	40% - 45%
Large	Beams > 300 Pipeline > 22"	35% - 40%	45% - 50%
Medium	Beams > 180 Pipeline > 12"	40% - 45%	50% - 55%
Small	Beams > 120 Pipeline > 6"	45% - 50%	55% - 60%
Very Small	Beams <= 100 Pipeline <= 4"	50% - 55%	60% - 65%

STOP work when Height Wind-Speed

Usually: We Calculate LF% From 35% - 45% (40%)

Actual quantities (Act Qty)

Act Qty = Area / Paint Rate – (Paint Rate * Loss Factors%)

$$= 1000\text{m}^2 / 4.75 \text{ Lt/m}^2 - (4.75 \text{ Lt/m}^2 * 40\%)$$

$$= 1000\text{m}^2 / 4.75 \text{ Lt/m}^2 - 1.9 \text{ Lt/m}^2$$


$$= 1000\text{m}^2 / 2.8 \text{ Lt/m}^2$$

$$= 358 \text{ Lt}/1000\text{m}^2$$

Calculate the quantity of paints!

Calculating Number of Packages PK

Look at the data sheet for the product

Technical Data Sheet		 Jotun Protects Property
Jotamastic 80		
Packaging (typical)		
	Volume (litres)	Size of containers (litres)
Jotamastic 80 Comp A	16	20
Jotamastic 80 STD Comp B	2.3	3

$$\text{PK} = \text{Comp A} + \text{Comp B} = 16 + 2.3 = 18.3 \text{ liter / PK}$$

$$\text{Total Packages} = \text{Act Qty} / \text{PK}$$

$$= \text{Roundup } 358\text{Lt} / 18.3 \text{ Lt/Pk}$$

$$= 20 \text{ Packages}$$

Calculate the quantity of paints!

Thinner Quantities (Th Qty) & Type

Th Qty = Total Liter * 15%

= 358 * 15%

= 54 Lt

Pk = 20 Lt

Total Pk = Roundup (Th Qty / Pk)

= 3 Packages

Type of Thinner

Look at the data sheet for the product

Thinner/Cleaning solvent

Thinner: Jotun Thinner No. 17

Calculate the quantity of paints!

Table for many Products for Area = 1000 m²

Product Name	Company	Thickness	Paint Rate Lt/m ²	Losses%	Act Qty Lt	Container PK Liter	Total Packages	Total Thinner Pk20Lt
Jotamastic 80	JOTUN	175	4.58	40%	364	18.3	20	3
Jotamastic 70	JOTUN	175	4.4	40%	379	19.17	20	3
Jotamastic 87	JOTUN	175	4.58	40%	364	18.7	20	3
Hardtop XP	JOTUN	50	12.6	50%	159	20	8	2
SIGMACOVE 410	SIGMA PPG	175	4.58	40%	364	20	19	3
SIGMADUR™ 550	SIGMA PPG	50	11	50%	182	20	10	2