

# Important Basic Formulas in Construction Planning and Management PDF



## Formulas Examples with Units

## List of 15 Important Basic Formulas in Construction Planning and Management

### 1) Critical Path Method Formulas

#### 1.1) Earliest Finish Time Formula

Formula

$$EFT = LFT - TF_0$$

Example with Units

$$26d = 50d - 24d$$

Evaluate Formula

#### 1.2) Free Float given Independent Float Formula

Formula

$$FF_0 = IF_0 + S$$

Example with Units

$$18d = 12d + 6.0d$$

Evaluate Formula

#### 1.3) Free Float used in CPM Formula

Formula

$$FF_0 = TF_0 - S$$

Example with Units

$$18d = 24d - 6.0d$$

Evaluate Formula

#### 1.4) Independent Float used in CPM Formula

Formula

$$IF_0 = FF_0 - S$$

Example with Units

$$12d = 18d - 6.0d$$

Evaluate Formula

#### 1.5) Interfering Float Formula

Formula

$$IF = TF_0 - FF_0$$

Example with Units

$$6d = 24d - 18d$$

Evaluate Formula

#### 1.6) Latest Finish Time Formula

Formula

$$LFT = TF_0 + EFT$$

Example with Units

$$50d = 24d + 26d$$

Evaluate Formula

#### 1.7) Slack of Event given Independent Float Formula

Formula

$$S = FF_0 - IF_0$$

Example with Units

$$6d = 18d - 12d$$

Evaluate Formula



## 1.8) Slack of Event in CPM Formula

Formula

$$S = TF_0 - FF_0$$

Example with Units

$$6d = 24d - 18d$$

Evaluate Formula 

## 1.9) Total Float given Free Float Formula

Formula

$$TF_0 = FF_0 + S$$

Example with Units

$$24d = 18d + 6.0d$$

Evaluate Formula 

## 1.10) Total Float in CPM Formula

Formula

$$TF_0 = LFT - EFT$$

Example with Units

$$24d = 50d - 26d$$

Evaluate Formula 

## 2) Time Cost Relation Formulas

### 2.1) Cost Slope Formula

Formula

$$CS = \frac{CC - NC}{NT - CT}$$

Example with Units

$$100 = \frac{400 - 300}{7d - 6d}$$

Evaluate Formula 

### 2.2) Crash Cost given Cost Slope Formula

Formula

$$CC = (CS \cdot (NT - CT)) + NC$$

Example with Units

$$400 = (100 \cdot (7d - 6d)) + 300$$

Evaluate Formula 

### 2.3) Crash Time given Slope Formula

Formula

$$CT = - \left( \left( \frac{CC - NC}{CS} \right) - NT \right)$$

Example with Units

$$6d = - \left( \left( \frac{400 - 300}{100} \right) - 7d \right)$$

Evaluate Formula 

### 2.4) Normal Cost given Slope Formula

Formula

$$NC = CC - (CS \cdot (NT - CT))$$

Example with Units

$$300 = 400 - (100 \cdot (7d - 6d))$$

Evaluate Formula 

### 2.5) Normal Time given Slope Formula

Formula

$$NT = \left( \frac{CC - NC}{CS} \right) + CT$$

Example with Units

$$7d = \left( \frac{400 - 300}{100} \right) + 6d$$

Evaluate Formula 



## Variables used in list of Basic Formulas in Construction Planning and Management above

- **CC** Crash Cost
- **CS** Cost Slope
- **CT** Crash Time (Day)
- **EFT** Earliest Finish Time (Day)
- **FF<sub>0</sub>** Free Float (Day)
- **IF** Interfering Float (Day)
- **IF<sub>0</sub>** Independent Float (Day)
- **LFT** Latest Finish Time (Day)
- **NC** Normal Cost
- **NT** Normal Time (Day)
- **S** Slack of an Event (Day)
- **TF<sub>0</sub>** Total Float (Day)

## Constants, Functions, Measurements used in list of Basic Formulas in Construction Planning and Management above

- **Measurement:** Time in Day (d)  
Time Unit Conversion 



## Download other Important Construction Practice, Planning and Management PDFs

- **Important Basic Formulas in Construction Planning and Management** 
- **Important Project Evaluation and Review Technique Formulas** 
- **Important Valuation Engineering Formulas** 
- **Important Construction Management Formulas** 

## Try our Unique Visual Calculators

-  **Percentage of number** 
-  **LCM calculator** 
-  **Simple fraction** 

Please SHARE this PDF with someone who needs it!

## This PDF can be downloaded in these languages

[English](#) [Spanish](#) [French](#) [German](#) [Russian](#) [Italian](#) [Portuguese](#) [Polish](#) [Dutch](#)

7/9/2024 | 5:16:48 AM UTC

