

PERHITUNGAN KUAT TEKAN RATA-RATA DAN KUAT TEKAN KARAKTERISTIK BENDA UJI KUBUS

1. Kuat Tekan Kubus dengan Faktor Air Semen 0.4 Umur 28 Hari

➤ Sampel 1

Kuat tekan kubus benda uji 1 :

$$\begin{aligned} &= \frac{\text{BesarTekanan}}{\text{LuasPenampang}} \\ &= \frac{700\text{KN}}{(15 \times 15)\text{cm}^2} \\ &= \frac{70000\text{kg}}{(15 \times 15)\text{cm}^2} \\ &= 311.11 \text{ kg / cm}^2 = 31.11 \text{ MPa} \end{aligned}$$

➤ Sampel 2

Kuat tekan kubus benda uji 2 :

$$\begin{aligned} &= \frac{\text{BesarTekanan}}{\text{LuasPenampang}} \\ &= \frac{840\text{KN}}{(15 \times 15)\text{cm}^2} \\ &= \frac{84000\text{kg}}{(15 \times 15)\text{cm}^2} \\ &= 373.33 \text{ kg / cm}^2 = 37.33 \text{ MPa} \end{aligned}$$

➤ Sampel 3

Kuat tekan kubus benda uji 3 :

$$= \frac{\text{BesarTekanan}}{\text{LuasPenampang}}$$

$$\begin{aligned} &= \frac{760KN}{(15 \times 15)cm^2} \\ &= \frac{76000kg}{(15 \times 15)cm^2} \\ &= 337.78 \text{ kg/cm}^2 = 33.78 \text{ MPa} \end{aligned}$$

➤ Sampel 4

Kuat tekan kubus benda uji 4 :

$$\begin{aligned} &= \frac{\text{BesarTekanan}}{\text{LuasPenampang}} \\ &= \frac{800KN}{(15 \times 15)cm^2} \\ &= \frac{80000kg}{(15 \times 15)cm^2} \\ &= 355.56 \text{ kg/cm}^2 = 35.56 \text{ MPa} \end{aligned}$$

➤ Sampel 5

Kuat tekan kubus benda uji 5 :

$$\begin{aligned} &= \frac{\text{BesarTekanan}}{\text{LuasPenampang}} \\ &= \frac{680KN}{(15 \times 15)cm^2} \\ &= \frac{68000kg}{(15 \times 15)cm^2} \\ &= 302.22 \text{ kg/cm}^2 = 30.22 \text{ MPa} \end{aligned}$$

➤ Sampel 6

Kuat tekan kubus benda uji 6 :

$$= \frac{\text{BesarTekanan}}{\text{LuasPenampang}}$$

$$\begin{aligned} &= \frac{740KN}{(15 \times 15)cm^2} \\ &= \frac{74000kg}{(15 \times 15)cm^2} \\ &= 328.89 \text{ kg/cm}^2 = 32.89 \text{ MPa} \end{aligned}$$

➤ Sampel 7

Kuat tekan kubus benda uji 7 :

$$\begin{aligned} &= \frac{\text{BesarTekanan}}{\text{LuasPenampang}} \\ &= \frac{780KN}{(15 \times 15)cm^2} \\ &= \frac{78000kg}{(15 \times 15)cm^2} \\ &= 346.67 \text{ kg/cm}^2 = 34.67 \text{ MPa} \end{aligned}$$

➤ Sampel 8

Kuat tekan kubus benda uji 8 :

$$\begin{aligned} &= \frac{\text{BesarTekanan}}{\text{LuasPenampang}} \\ &= \frac{690KN}{(15 \times 15)cm^2} \\ &= \frac{69000kg}{(15 \times 15)cm^2} \\ &= 306.67 \text{ kg/cm}^2 = 30.67 \text{ MPa} \end{aligned}$$

➤ Sampel 9

Kuat tekan kubus benda uji 9 :

$$= \frac{\text{BesarTekanan}}{\text{LuasPenampang}}$$

$$\begin{aligned} &= \frac{820KN}{(15 \times 15)cm^2} \\ &= \frac{82000kg}{(15 \times 15)cm^2} \\ &= 364.44 \text{ kg/cm}^2 = 36.44 \text{ MPa} \end{aligned}$$

➤ Sampel 10

Kuat tekan kubus benda uji 10 :

$$\begin{aligned} &= \frac{\text{BesarTekanan}}{\text{LuasPenampang}} \\ &= \frac{720KN}{(15 \times 15)cm^2} \\ &= \frac{72000kg}{(15 \times 15)cm^2} \\ &= 320 \text{ kg/cm}^2 = 32 \text{ MPa} \end{aligned}$$

➤ Sampel 11

Kuat tekan kubus benda uji 11 :

$$\begin{aligned} &= \frac{\text{BesarTekanan}}{\text{LuasPenampang}} \\ &= \frac{670KN}{(15 \times 15)cm^2} \\ &= \frac{67000kg}{(15 \times 15)cm^2} \\ &= 297.78 \text{ kg/cm}^2 = 29.78 \text{ MPa} \end{aligned}$$

➤ Sampel 12

Kuat tekan kubus benda uji 12 :

$$= \frac{\text{BesarTekanan}}{\text{LuasPenampang}}$$

$$\begin{aligned} &= \frac{900 \text{ KN}}{(15 \times 15) \text{ cm}^2} \\ &= \frac{90000 \text{ kg}}{(15 \times 15) \text{ cm}^2} \\ &= 400 \text{ kg / cm}^2 = 40 \text{ MPa} \end{aligned}$$

➤ Sampel 13

Kuat tekan kubus benda uji 13 :

$$\begin{aligned} &= \frac{\text{Besar Tekanan}}{\text{Luas Penampang}} \\ &= \frac{640 \text{ KN}}{(15 \times 15) \text{ cm}^2} \\ &= \frac{64000 \text{ kg}}{(15 \times 15) \text{ cm}^2} \\ &= 284.44 \text{ kg / cm}^2 = 28.44 \text{ MPa} \end{aligned}$$

➤ Sampel 14

Kuat tekan kubus benda uji 14 :

$$\begin{aligned} &= \frac{\text{Besar Tekanan}}{\text{Luas Penampang}} \\ &= \frac{820 \text{ KN}}{(15 \times 15) \text{ cm}^2} \\ &= \frac{82000 \text{ kg}}{(15 \times 15) \text{ cm}^2} \\ &= 364.44 \text{ kg / cm}^2 = 36.44 \text{ MPa} \end{aligned}$$

➤ Sampel 15

Kuat tekan kubus benda uji 15 :

$$= \frac{\text{Besar Tekanan}}{\text{Luas Penampang}}$$

$$\begin{aligned} & \frac{830\text{KN}}{(15 \times 15)\text{cm}^2} \\ = & \frac{83000\text{kg}}{(15 \times 15)\text{cm}^2} \\ = & 368.89 \text{ kg/cm}^2 = 36.89 \text{ MPa} \end{aligned}$$

➤ Sampel 16

Kuat tekan kubus benda uji 16 :

$$\begin{aligned} = & \frac{\text{BesarTekanan}}{\text{LuasPenampang}} \\ = & \frac{760\text{KN}}{(15 \times 15)\text{cm}^2} \\ = & \frac{76000\text{kg}}{(15 \times 15)\text{cm}^2} \\ = & 337.78 \text{ kg/cm}^2 = 33.78 \text{ MPa} \end{aligned}$$

➤ Sampel 17

Kuat tekan kubus benda uji 17 :

$$\begin{aligned} = & \frac{\text{BesarTekanan}}{\text{LuasPenampang}} \\ = & \frac{760\text{KN}}{(15 \times 15)\text{cm}^2} \\ = & \frac{76000\text{kg}}{(15 \times 15)\text{cm}^2} \\ = & 337.78 \text{ kg/cm}^2 = 33.78 \text{ MPa} \end{aligned}$$

➤ Sampel 18

Kuat tekan kubus benda uji 18 :

$$= \frac{\text{BesarTekanan}}{\text{LuasPenampang}}$$

$$\begin{aligned} &= \frac{780KN}{(15 \times 15)cm^2} \\ &= \frac{78000kg}{(15 \times 15)cm^2} \\ &= 346.67 \text{ kg/cm}^2 = 34.67 \text{ MPa} \end{aligned}$$

➤ Sampel 19

Kuat tekan kubus benda uji 19 :

$$\begin{aligned} &= \frac{\text{BesarTekanan}}{\text{LuasPenampang}} \\ &= \frac{800KN}{(15 \times 15)cm^2} \\ &= \frac{80000kg}{(15 \times 15)cm^2} \\ &= 355.56 \text{ kg/cm}^2 = 35.56 \text{ MPa} \end{aligned}$$

➤ Sampel 20

Kuat tekan kubus benda uji 20 :

$$\begin{aligned} &= \frac{\text{BesarTekanan}}{\text{LuasPenampang}} \\ &= \frac{720KN}{(15 \times 15)cm^2} \\ &= \frac{72000kg}{(15 \times 15)cm^2} \\ &= 320 \text{ kg/cm}^2 = 32 \text{ Mpa} \end{aligned}$$

☞ **Kuat tekan rata – rata dan kuat tekan karakteristik pada FAS 0.4 :**

$$\sigma'_{bm} = (31.11 + 37.33 + 33.78 + 35.56 + 30.22 + 32.89 + 34.67 + 30.67 + 36.44 + 32 + 29.78 + 40 + 28.44 + 36.44 + 36.89 + 33.78 + 33.78 + 34.67 + 35.56 + 32) / 20$$

$$\sigma'_{bm} = 33.8 \text{ Mpa} = 338 \text{ kg/cm}^2$$

$$\sigma'_{bk} = \sigma'_{bm} - 1.64 \times S$$

$$\sigma'_{bk} = 338 - 1.64 \times 29.3 = 289.9 \text{ kg/cm}^2$$

2. Kuat Tekan Kubus dengan Faktor Air Semen 0.5 Umur 28 Hari

➤ Sampel 1

Kuat tekan kubus benda uji 1 :

$$\begin{aligned} &= \frac{\text{BesarTekanan}}{\text{LuasPenampang}} \\ &= \frac{480\text{KN}}{(15 \times 15)\text{cm}^2} \\ &= \frac{48000\text{kg}}{(15 \times 15)\text{cm}^2} \\ &= 213.33 \text{ kg/cm}^2 = 21.33 \text{ MPa} \end{aligned}$$

➤ Sampel 2

Kuat tekan kubus benda uji 2 :

$$\begin{aligned} &= \frac{\text{BesarTekanan}}{\text{LuasPenampang}} \\ &= \frac{500\text{KN}}{(15 \times 15)\text{cm}^2} \\ &= \frac{50000\text{kg}}{(15 \times 15)\text{cm}^2} \\ &= 222.22 \text{ kg/cm}^2 = 22.22 \text{ MPa} \end{aligned}$$

➤ Sampel 3

Kuat tekan kubus benda uji 3 :

$$= \frac{\text{BesarTekanan}}{\text{LuasPenampang}}$$

$$\begin{aligned} &= \frac{470\text{KN}}{(15 \times 15)\text{cm}^2} \\ &= \frac{47000\text{kg}}{(15 \times 15)\text{cm}^2} \\ &= 208.89 \text{ kg/cm}^2 = 20.89 \text{ MPa} \end{aligned}$$

➤ Sampel 4

Kuat tekan kubus benda uji 4 :

$$\begin{aligned} &= \frac{\text{BesarTekanan}}{\text{LuasPenampang}} \\ &= \frac{520\text{KN}}{(15 \times 15)\text{cm}^2} \\ &= \frac{52000\text{kg}}{(15 \times 15)\text{cm}^2} \\ &= 231.11 \text{ kg/cm}^2 = 23.11 \text{ MPa} \end{aligned}$$

➤ Sampel 5

Kuat tekan kubus benda uji 5 :

$$\begin{aligned} &= \frac{\text{BesarTekanan}}{\text{LuasPenampang}} \\ &= \frac{500\text{KN}}{(15 \times 15)\text{cm}^2} \\ &= \frac{50000\text{kg}}{(15 \times 15)\text{cm}^2} \\ &= 222.22 \text{ kg/cm}^2 = 22.22 \text{ MPa} \end{aligned}$$

➤ Sampel 6

Kuat tekan kubus benda uji 6 :

$$= \frac{\text{BesarTekanan}}{\text{LuasPenampang}}$$

$$\begin{aligned} &= \frac{490\text{KN}}{(15 \times 15)\text{cm}^2} \\ &= \frac{49000\text{kg}}{(15 \times 15)\text{cm}^2} \\ &= 217.78 \text{ kg/cm}^2 = 21.78 \text{ MPa} \end{aligned}$$

➤ Sampel 7

Kuat tekan kubus benda uji 7 :

$$\begin{aligned} &= \frac{\text{BesarTekanan}}{\text{LuasPenampang}} \\ &= \frac{460\text{KN}}{(15 \times 15)\text{cm}^2} \\ &= \frac{46000\text{kg}}{(15 \times 15)\text{cm}^2} \\ &= 204.44 \text{ kg/cm}^2 = 20.44 \text{ MPa} \end{aligned}$$

➤ Sampel 8

Kuat tekan kubus benda uji 8 :

$$\begin{aligned} &= \frac{\text{BesarTekanan}}{\text{LuasPenampang}} \\ &= \frac{510\text{KN}}{(15 \times 15)\text{cm}^2} \\ &= \frac{51000\text{kg}}{(15 \times 15)\text{cm}^2} \\ &= 226.67 \text{ kg/cm}^2 = 22.67 \text{ MPa} \end{aligned}$$

➤ Sampel 9

Kuat tekan kubus benda uji 9 :

$$= \frac{\text{BesarTekanan}}{\text{LuasPenampang}}$$

$$\begin{aligned} &= \frac{480KN}{(15 \times 15)cm^2} \\ &= \frac{48000kg}{(15 \times 15)cm^2} \\ &= 213.33 \text{ kg/cm}^2 = 21.33 \text{ MPa} \end{aligned}$$

➤ Sampel 10

Kuat tekan kubus benda uji 10 :

$$\begin{aligned} &= \frac{\text{BesarTekanan}}{\text{LuasPenampang}} \\ &= \frac{470KN}{(15 \times 15)cm^2} \\ &= \frac{47000kg}{(15 \times 15)cm^2} \\ &= 208.89 \text{ kg/cm}^2 = 20.89 \text{ MPa} \end{aligned}$$

➤ Sampel 11

Kuat tekan kubus benda uji 11 :

$$\begin{aligned} &= \frac{\text{BesarTekanan}}{\text{LuasPenampang}} \\ &= \frac{500KN}{(15 \times 15)cm^2} \\ &= \frac{50000kg}{(15 \times 15)cm^2} \\ &= 222.22 \text{ kg/cm}^2 = 22.22 \text{ MPa} \end{aligned}$$

➤ Sampel 12

Kuat tekan kubus benda uji 12 :

$$= \frac{\text{BesarTekanan}}{\text{LuasPenampang}}$$

$$\begin{aligned} &= \frac{490KN}{(15 \times 15)cm^2} \\ &= \frac{49000kg}{(15 \times 15)cm^2} \\ &= 217.78 \text{ kg/cm}^2 = 21.78 \text{ MPa} \end{aligned}$$

➤ Sampel 13

Kuat tekan kubus benda uji 13 :

$$\begin{aligned} &= \frac{\text{BesarTekanan}}{\text{LuasPenampang}} \\ &= \frac{440KN}{(15 \times 15)cm^2} \\ &= \frac{44000kg}{(15 \times 15)cm^2} \\ &= 195.6 \text{ kg/cm}^2 = 19.56 \text{ MPa} \end{aligned}$$

➤ Sampel 14

Kuat tekan kubus benda uji 14 :

$$\begin{aligned} &= \frac{\text{BesarTekanan}}{\text{LuasPenampang}} \\ &= \frac{510KN}{(15 \times 15)cm^2} \\ &= \frac{51000kg}{(15 \times 15)cm^2} \\ &= 226.7 \text{ kg/cm}^2 = 22.67 \text{ MPa} \end{aligned}$$

➤ Sampel 15

Kuat tekan kubus benda uji 15 :

$$= \frac{\text{BesarTekanan}}{\text{LuasPenampang}}$$

$$\begin{aligned} &= \frac{550 \text{ KN}}{(15 \times 15) \text{ cm}^2} \\ &= \frac{55000 \text{ kg}}{(15 \times 15) \text{ cm}^2} \\ &= 244.44 \text{ kg/cm}^2 = 24.44 \text{ MPa} \end{aligned}$$

➤ Sampel 16

Kuat tekan kubus benda uji 16 :

$$\begin{aligned} &= \frac{\text{Besar Tekanan}}{\text{Luas Penampang}} \\ &= \frac{500 \text{ KN}}{(15 \times 15) \text{ cm}^2} \\ &= \frac{50000 \text{ kg}}{(15 \times 15) \text{ cm}^2} \\ &= 222.22 \text{ kg/cm}^2 = 22.22 \text{ MPa} \end{aligned}$$

➤ Sampel 17

Kuat tekan kubus benda uji 17 :

$$\begin{aligned} &= \frac{\text{Besar Tekanan}}{\text{Luas Penampang}} \\ &= \frac{480 \text{ KN}}{(15 \times 15) \text{ cm}^2} \\ &= \frac{48000 \text{ kg}}{(15 \times 15) \text{ cm}^2} \\ &= 213.33 \text{ kg/cm}^2 = 21.33 \text{ MPa} \end{aligned}$$

➤ Sampel 18

Kuat tekan kubus benda uji 18 :

$$= \frac{\text{Besar Tekanan}}{\text{Luas Penampang}}$$

$$\begin{aligned} &= \frac{480KN}{(15 \times 15)cm^2} \\ &= \frac{48000kg}{(15 \times 15)cm^2} \\ &= 213.33 \text{ kg/cm}^2 = 21.33 \text{ MPa} \end{aligned}$$

➤ Sampel 19

Kuat tekan kubus benda uji 19 :

$$\begin{aligned} &= \frac{\text{BesarTekanan}}{\text{LuasPenampang}} \\ &= \frac{450KN}{(15 \times 15)cm^2} \\ &= \frac{45000kg}{(15 \times 15)cm^2} \\ &= 200 \text{ kg/cm}^2 = 20 \text{ MPa} \end{aligned}$$

➤ Sampel 20

Kuat tekan kubus benda uji 20 :

$$\begin{aligned} &= \frac{\text{BesarTekanan}}{\text{LuasPenampang}} \\ &= \frac{450KN}{(15 \times 15)cm^2} \\ &= \frac{45000kg}{(15 \times 15)cm^2} \\ &= 200 \text{ kg/cm}^2 = 20 \text{ Mpa} \end{aligned}$$

☞ **Kuat tekan rata – rata dan kuat tekan karakteristik pada FAS 0.5 :**

$$\sigma'_{bm} = (21.33 + 22.22 + 20.89 + 23.11 + 22.22 + 21.78 + 20.44 + 22.67 + 21.33 + 20.89 + 22.22 + 21.78 + 19.56 + 22.67 + 24.44 + 22.22 + 21.33 + 21.33 + 20 + 20) / 20$$

$$\sigma'_{bm} = 21.62 \text{ Mpa} = 216.2 \text{ kg/cm}^2$$

$$\sigma'_{bk} = \sigma'_{bm} - 1.64 \times S$$

$$\sigma'_{bk} = 216.2 - 1.64 \times 19 = 185 \text{ kg/cm}^2$$

3. Kuat Tekan Kubus dengan Faktor Air Semen 0.6 Umur 28 Hari

➤ Sampel 1

Kuat tekan kubus benda uji 1 :

$$\begin{aligned} &= \frac{\text{BesarTekanan}}{\text{LuasPenampang}} \\ &= \frac{420KN}{(15 \times 15)cm^2} \\ &= \frac{42000kg}{(15 \times 15)cm^2} \\ &= 186.7 \text{ kg/cm}^2 = 18.67 \text{ MPa} \end{aligned}$$

➤ Sampel 2

Kuat tekan kubus benda uji 2 :

$$\begin{aligned} &= \frac{\text{BesarTekanan}}{\text{LuasPenampang}} \\ &= \frac{420KN}{(15 \times 15)cm^2} \\ &= \frac{42000kg}{(15 \times 15)cm^2} \\ &= 186.7 \text{ kg/cm}^2 = 18.67 \text{ MPA} \end{aligned}$$

➤ Sampel 3

Kuat tekan kubus benda uji 3 :

$$= \frac{\text{BesarTekanan}}{\text{LuasPenampang}}$$

$$\begin{aligned} &= \frac{370KN}{(15 \times 15)cm^2} \\ &= \frac{37000kg}{(15 \times 15)cm^2} \\ &= 164.44 \text{ kg/cm}^2 = 16.44 \text{ MPa} \end{aligned}$$

➤ Sampel 4

Kuat tekan kubus benda uji 4 :

$$\begin{aligned} &= \frac{\text{BesarTekanan}}{\text{LuasPenampang}} \\ &= \frac{460KN}{(15 \times 15)cm^2} \\ &= \frac{46000kg}{(15 \times 15)cm^2} \\ &= 204.44 \text{ kg/cm}^2 = 20.44 \text{ MPa} \end{aligned}$$

➤ Sampel 5

Kuat tekan kubus benda uji 5 :

$$\begin{aligned} &= \frac{\text{BesarTekanan}}{\text{LuasPenampang}} \\ &= \frac{420KN}{(15 \times 15)cm^2} \\ &= \frac{42000kg}{(15 \times 15)cm^2} \\ &= 186.7 \text{ kg/cm}^2 = 18.67 \text{ MPa} \end{aligned}$$

➤ Sampel 6

Kuat tekan kubus benda uji 6 :

$$= \frac{\text{BesarTekanan}}{\text{LuasPenampang}}$$

$$\begin{aligned} &= \frac{490KN}{(15 \times 15)cm^2} \\ &= \frac{49000kg}{(15 \times 15)cm^2} \\ &= 217.78 \text{ kg/cm}^2 = 21.78 \text{ MPa} \end{aligned}$$

➤ Sampel 7

Kuat tekan kubus benda uji 7 :

$$\begin{aligned} &= \frac{\text{BesarTekanan}}{\text{LuasPenampang}} \\ &= \frac{470KN}{(15 \times 15)cm^2} \\ &= \frac{47000kg}{(15 \times 15)cm^2} \\ &= 208.89 \text{ kg/cm}^2 = 20.89 \text{ MPa} \end{aligned}$$

➤ Sampel 8

Kuat tekan kubus benda uji 8 :

$$\begin{aligned} &= \frac{\text{BesarTekanan}}{\text{LuasPenampang}} \\ &= \frac{400KN}{(15 \times 15)cm^2} \\ &= \frac{40000kg}{(15 \times 15)cm^2} \\ &= 177.78 \text{ kg/cm}^2 = 17.78 \text{ MPa} \end{aligned}$$

➤ Sampel 9

Kuat tekan kubus benda uji 9 :

$$= \frac{\text{BesarTekanan}}{\text{LuasPenampang}}$$

$$\begin{aligned} &= \frac{460KN}{(15 \times 15)cm^2} \\ &= \frac{46000kg}{(15 \times 15)cm^2} \\ &= 204.44 \text{ kg/cm}^2 = 20.44 \text{ MPa} \end{aligned}$$

➤ Sampel 10

Kuat tekan kubus benda uji 10 :

$$\begin{aligned} &= \frac{\text{BesarTekanan}}{\text{LuasPenampang}} \\ &= \frac{470KN}{(15 \times 15)cm^2} \\ &= \frac{47000kg}{(15 \times 15)cm^2} \\ &= 208.89 \text{ kg/cm}^2 = 20.89 \text{ MPa} \end{aligned}$$

➤ Sampel 11

Kuat tekan kubus benda uji 11 :

$$\begin{aligned} &= \frac{\text{Besar.tekanan}}{\text{Luas.penampang}} \\ &= \frac{370KN}{(15 \times 15)cm^2} \\ &= \frac{37000kg}{(15 \times 15)cm^2} \\ &= 164.44 \text{ kg/cm}^2 = 16.44 \text{ MPa} \end{aligned}$$

➤ Sampel 12

Kuat tekan kubus benda uji 12 :

$$= \frac{\text{BesarTekanan}}{\text{LuasPenampang}}$$

$$\begin{aligned} &= \frac{360KN}{(15 \times 15)cm^2} \\ &= \frac{36000kg}{(15 \times 15)cm^2} \\ &= 160 \text{ kg/cm}^2 = 16 \text{ MPa} \end{aligned}$$

➤ Sampel 13

Kuat tekan kubus benda uji 13 :

$$\begin{aligned} &= \frac{\text{BesarTekanan}}{\text{LuasPenampang}} \\ &= \frac{460KN}{(15 \times 15)cm^2} \\ &= \frac{46000kg}{(15 \times 15)cm^2} \\ &= 204.44 \text{ kg/cm}^2 = 20.44 \text{ MPa} \end{aligned}$$

➤ Sampel 14

Kuat tekan kubus benda uji 14 :

$$\begin{aligned} &= \frac{\text{BesarTekanan}}{\text{LuasPenampang}} \\ &= \frac{400KN}{(15 \times 15)cm^2} \\ &= \frac{40000kg}{(15 \times 15)cm^2} \\ &= 177.78 \text{ kg/cm}^2 = 17.78 \text{ MPa} \end{aligned}$$

➤ Sampel 15

Kuat tekan kubus benda uji 15 :

$$= \frac{\text{BesarTekanan}}{\text{LuasPenampang}}$$

$$\begin{aligned} &= \frac{380KN}{(15 \times 15)cm^2} \\ &= \frac{38000kg}{(15 \times 15)cm^2} \\ &= 168.89 \text{ kg/cm}^2 = 16.89 \text{ MPa} \end{aligned}$$

➤ Sampel 16

Kuat tekan kubus benda uji 16 :

$$\begin{aligned} &= \frac{\text{BesarTekanan}}{\text{LuasPenampang}} \\ &= \frac{400KN}{(15 \times 15)cm^2} \\ &= \frac{40000kg}{(15 \times 15)cm^2} \\ &= 177.78 \text{ kg/cm}^2 = 17.78 \text{ MPa} \end{aligned}$$

➤ Sampel 17

Kuat tekan kubus benda uji 17 :

$$\begin{aligned} &= \frac{\text{BesarTekanan}}{\text{LuasPenampang}} \\ &= \frac{440KN}{(15 \times 15)cm^2} \\ &= \frac{44000kg}{(15 \times 15)cm^2} \\ &= 195.6 \text{ kg/cm}^2 = 19.56 \text{ MPa} \end{aligned}$$

➤ Sampel 18

Kuat tekan kubus benda uji 18 :

$$= \frac{\text{BesarTekanan}}{\text{LuasPenampang}}$$

$$\begin{aligned} &= \frac{500KN}{(15 \times 15)cm^2} \\ &= \frac{50000kg}{(15 \times 15)cm^2} \\ &= 222.2 \text{ kg/cm}^2 = 22.22 \text{ MPa} \end{aligned}$$

➤ Sampel 19

Kuat tekan kubus benda uji 19 :

$$\begin{aligned} &= \frac{\text{BesarTekanan}}{\text{LuasPenampang}} \\ &= \frac{480KN}{(15 \times 15)cm^2} \\ &= \frac{48000kg}{(15 \times 15)cm^2} \\ &= 213.33 \text{ kg/cm}^2 = 21.33 \text{ MPa} \end{aligned}$$

➤ Sampel 20

Kuat tekan kubus benda uji 20 :

$$\begin{aligned} &= \frac{\text{BesarTekanan}}{\text{LuasPenampang}} \\ &= \frac{430KN}{(15 \times 15)cm^2} \\ &= \frac{43000kg}{(15 \times 15)cm^2} \\ &= 191.11 \text{ kg/cm}^2 = 19.11 \text{ Mpa} \end{aligned}$$

☞ **Kuat tekan rata – rata dan kuat tekan karakteristik pada FAS 0.6 :**

$$\sigma'_{bm} = (18.67 + 18.67 + 16.44 + 20.44 + 18.67 + 21.78 + 20.89 + 17.78 + 20.44 + 20.89 + 16.44 + 16 + 20.44 + 17.78 + 16.89 + 17.78 + 19.56 + 22.22 + 21.33 + 19.11) / 20$$

$$\sigma'_{bm} = 19.11 \text{ Mpa} = 191.1 \text{ kg/cm}^2$$

$$\sigma'_{bk} = \sigma'_{bm} - 1.64 \times S$$

$$\sigma'_{bk} = 191.1 - 1.64 \times 18.9 = 160.1 \text{ kg/cm}^2$$

PRODUK SEMEN GRESIK

PPC



SNI 15-0302-1994
JENIS A
BERAT BERSIH 40 kg

PPC adalah semen campuran yang menggunakan pozzolan sebagai bahan tambahan pada campuran terak dan gips dalam proses penggilingan akhir. Semen jenis ini sesuai untuk pengecoran beton massa, dam, irigasi, bangunan tepi laut atau rawa, yang memerlukan ketahanan sulfat dan panas hidrasi sedang.

PETUNJUK PRAKTIS PENGGUNAAN

Campuran Beton

175	145	190	297	475	1143
225	185	190	325	716	1144
300	250	190	371	680	1134
350	290	190	402	642	1121
450	375	190	463	603	1119
500	415	190	487	577	1121

* Agregat dalam kondisi SSD dengan ukuran maks. 40 mm

* Proporsi tersebut mempunyai toleransi $\pm 5\%$

Laporan Tugas Akhir

Campuran Adukan & Plesteran			
Bahan Bangun Batu Kali			
	1	1	8
Bahan Bangun Batu Bata			
- Dinding kamar mandi	1	-	3
- Dinding selain kamar mandi	1	-	7-8
- Dinding selain kamar mandi	1	1	8
Bahan Bangun Bako			
- Dinding kamar mandi	1	-	3
- Dinding selain kamar mandi	1	-	7-8
- Dinding selain kamar mandi	1	1	8

Elemen Bangunan					
Bahan Bangun Genteng					
Hollow Brick	1	4-6	-	-	-
	1	7-10	-	2-5	-
Paving Block		2-2,5	0,5	1-1,5	

Spesifikasi Teknis					
Grup Jenis Kimia					
Silikon Dioksida	(SiO ₂),%	-	-	-	23,13
Alumina Dioksida	(Al ₂ O ₃),%	-	-	-	8,76
Ferri Oksida	(Fe ₂ O ₃),%	-	-	-	4,62
Kalsium Oksida	(CaO),%				58,66
Magnesium Oksida	(MgO),%	≤ 6,00	≤ 6,00	≤ 6,00	0,90
Sulfur Trioksida	(SO ₃),%	≤ 4,00	≤ 4,00	≤ 4,00	2,15
Hilang Pijar	(LOI),%	≤ 5,00	≤ 5,00	≤ 5,00	1,69

Laporan Tugas Akhir

Kandungan Bebas					0,69
Bagian tidak Larut	,%	-	-	-	8,82
Pengujian Fisika :					
Kehalusan					
- Sisa diatas ayakan 0,09 mm	,%	-	-	(A)	-
- Dengan Alat Blaine	(m ² /Kg)	≥280	≥280	(A)	325
Waktu Pengikatan dengan alat Vicat					
- Awal	(menit)	≥ 45	≥ 45	≥ 45	153
- Akhir	(menit)	≤ 420	≤ 420	≤ 420	249
Kekakuan dengan alat atrodia Vicat					
- Pemuaian	(%)	≤ 0,80	≤ 0,80	≤ 0,80	0,043
- Penyusutan	(%)	≤ 0,20	≤ 0,20	≤ 0,20	-
Kuat Tekan					
- 3 hari	(Kg/cm ²)	≥ 133	≥ 106	≥ 133	205
- 7 hari	(Kg/cm ²)	≥ 205	≥ 164	≥ 205	290
- 28 hari	(Kg/cm ²)	≥ 256	≥ 205	≥ 256	385
Panas Hidrasi					
- 7 hari	(cal/gr)	-	≤ 70	≤ 70 (B)	68,15
- 28 hari	(cal/gr)	-	≤ 80	≤ 80 (B)	78,40
Kandungan Udara :	(%)	≤ 12 (C)	≤ 12 (C)	≤ 12	6,40
Keterangan :					
(A) : Sesuai permintaan					
(B) : Berlaku bila diperlukan panas hidrasi rendah atau sedang, dan syarat kuat tekan minimum menjadi 80% dari syarat diatas					
(C) : Bila diperlukan/diminta oleh konsumen atau produsen					

(Sumber : www.semengresik.com)



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F. 5.10/0/1/1

LAPORAN PENGUJIAN
REPORT OF ANALYSIS

Nomor Contoh : 427. 2007 / BA. 309
Sample Number

Jenis contoh : LIMBAH TRASO
Material

Cap/Kode : —
Merk/Code

Parameter : —
Parameters

Asal Contoh : SIGIT TRI SUBEKTI
Sample's origin : Karangrejo Selatan RT.05 / 03 Jatingaleh Semarang

Dibuat Untuk : SIGIT TRI SUBEKTI
Executed : Karangrejo Selatan RT.05 / 03 Jatingaleh Semarang

Tgl. Pengambilan Contoh : —
Sample taken on

Tgl. Penerimaan Contoh : 21 Maret 2007
Sample received on

Pemasan : Plastik
Packing

HASIL PENGUJIAN
TEST RESULT

No	Parameter	Satuan	Hasil Uji	Metode Uji
1	Na Cl	%	0,32	Argentometri
2	Bahan Organik	%	1,13	Walkley Black

Semarang, 9 April 2007
Manajer Teknik
Penguji Aneka Komoditi

