

TPI Portland Cement Type V (Red)

	TIS 15-2532 Type V	ASTM C 150 Type V	TPI (Red) Typical ave. value
1. Chemical Requirements			
Magnesium oxide (mgO) %max	6.0	6.0	1.2
Sulfur trioxide (SO ₃)			
When 3 CaO. Al ₂ O ₃ is 8% or less% max	3.0	3.0	2.5
When 3 CaO. Al ₂ O ₃ is more than 8%	3.5	3.5	
Loss on ignition (LOI) % max	3.0	3.0	1.0
Insoluble residue (IR) % max	0.75	0.75	0.30
Tricalcium silicate (2CaO.SiO ₂) %			58
Tricalcium aluminate (3CaO.Al ₂ O ₃)			8
Total Alkalies (Na ₂ O+0.658K ₂ O)	0.60	0.60	0.40
2. Physical Requirements			
Fineness: Specific surface, air			
Permeability test cm ² /g min	2800	2800	3500
Soundness: Autoclave			
Expansion % max	0.80	0.80	0.01
Time of setting: Vicat test			
Initial set minutes min	45	45	100
Final set minutes max	375	375	180
Air content of mortar, volume% max	12	12	5
Compressive Strength: Mortar cubes:			
1 day in moist air, 2 days in water kgf/cm ²		122	180
1 day in moist air, 6 days in water kgf/cm ²	150	194	250

TPI Portland Cement Type V (Blue)

	TIS 15-2532 Type V	ASTM C 150 Type V	TPI (Blue) Typical ave. value
1. Chemical Requirements			
Magnesium oxide (mgO) %max	6.0	6.0	1.8
Sulfur trioxide (SO ₃) % max	2.3	2.3	1.8
Loss on ignition (LOI) % max	3.0	3.0	1.0
Insoluble residue (IR) % max	0.75	0.75	0.30
Tricalcium silicate (2CaO.SiO ₂) %			60
Tricalcium aluminate (3CaO.Al ₂ O ₃)	5	5	2
4CaO.Al ₂ O ₃ .Fe ₂ O ₃ +2(3CaO.Al ₂ O ₃)	25	25	19
Total Alkalies (Na ₂ O+0.658K ₂ O)	0.60	0.60	0.40
2. Physical Requirements			
Fineness: Specific surface, air			
Permeability test cm ² /g min	2800	2800	3700
Soundness: Autoclave Expansion % max	0.80	0.80	0.02
Time of setting: Vicat test			
Initial set minutes min	45	45	110
Final set minutes max	375	375	200
Air content of mortar, volume% max	12	12	6
Compressive Strength: Mortar cubes:			
1 day in moist air, 2 days in water kgf/cm ²		82	180
1 day in moist air, 6 days in water kgf/cm ²	105	153	250
1 day in moist air, 27 days in water kgf/cm ²	210	214	400