



# Shree Sivababalaji Steels P. Ltd.

AUTHORISED DISTRIBUTOR FOR SOUTH TAMILNADU

## Portland Slag Cement (PSC)

Portland Slag Cement, commonly known as PSC, is blended cement. Slag is, essentially, a non-metallic product comprising of more than 90% glass with silicates and aluminosilicates of lime. At JSW Cement, we use superior quality slag produced at our steel manufacturing plant, conforming to IS: 12089 standards for producing PSC. It is created with a combination of upto 45- 50% slag, 45% - 50% clinker, and 3-5% gypsum. PSC has been voted as the most suitable cement for mass construction because of its low heat of hydration.

### The multi-fold advantages of PSC

PSC's inherent chemistry gives it several advantages over ordinary cement. Apart from being more environment-friendly, it offers;

- Ultimate compressive strength
- Excellent resistance to Chloride & Sulphate attacks
- Low risk of cracking
- Improved workability
- Better compatibility with all types of admixtures
- Superior finish
- Ease of pumping
- Better resistance against alkali-silica reaction
- Minimised shrinkage cracks



### Where PSC can be used?

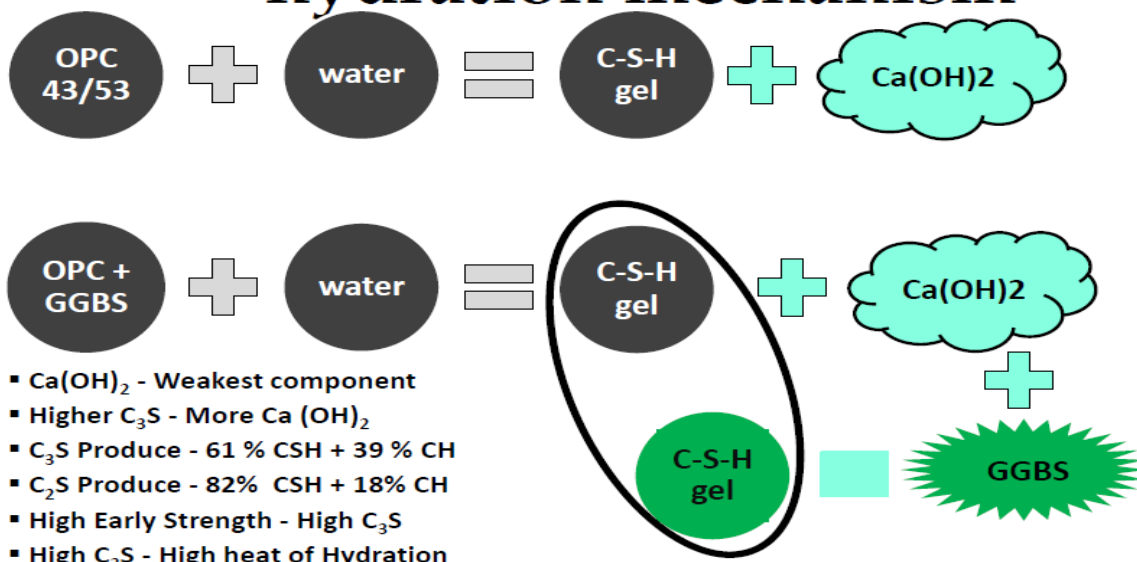
- All types of residential, commercial and industrial projects
- Dams and other mass concrete works
- Water retaining structures
- Concrete roads and flyovers
- Most suitable for marine constructions
- Pre-cast concrete products
- Foundations and piles construction

## HOW THE PORTLAND SLAG CEMENT IS MADE?

### Portland Slag Cement IS 455-1989

- Portland Slag cement is manufactured by either inter-grinding the Portland cement clinker, Gypsum and granulated slag or blending the ground granulated blast furnace slag (GGBS) with Ordinary Portland cement by means of mechanical blenders.
- Slag cement is manufactured as per BIS specification IS 455 - 1989 and quantity of slag added shall be in the range of 25% to 70%.

## OPC & Slag Cement hydration mechanism



## PORTLAND SLAG CEMENT - Applications & Benefits

### **PSC - APPLICATIONS**

- **RCC in all types of foundations and super structure works.**
- **General building construction.**
- **Express ways.**
- **Mass concrete works in Dams, Spillways, Canals, Foundations etc**
- **Under ground works, Retaining walls, culverts and drainage works**
- **Effluent and sewage treatment plants**
- **Grouts and Mortars and Cement based products**
- **Waterproofing, Plastering, brick work and finishing works**
- **Marine works**



### **Technical Benefits of Slag Cement**



- ❖ Better workability.
- ❖ Making placing and compaction easier .
- ❖ Lower early-age temperature rise.
- ❖ Reducing the risk of thermal cracking in large pours.
- ❖ Resistance to Alkali Silica Reactivity(ASR)
- ❖ High resistance to chloride attack.
- ❖ Reducing the risk of reinforcement corrosion
- ❖ High resistance to attack by sulphate and other chemicals
- ❖ Considerable sustainability benefits

# TEST CERTIFICATE



ISO 9001, ISO 14001, ISO 50001 & OHSAS 18001  
Certified by PCIS



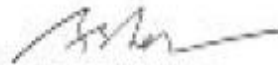
**JSW CEMENT LTD.,**  
**Bilakalagudur IS: 433: 1989**

## TEST CERTIFICATE FOR PORTLAND SLAG CEMENT

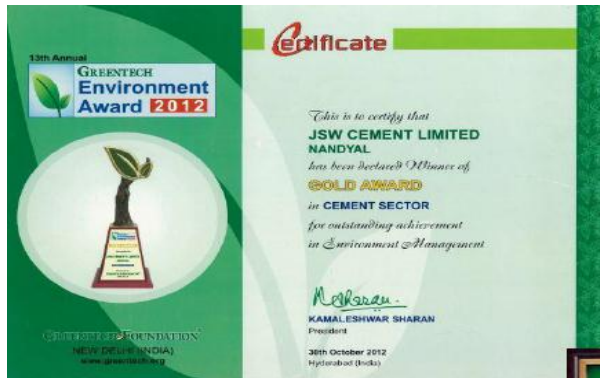
S.No.	Characteristics	Requirement as Per IS 433:1989	Test Result
<b>CHEMICAL REQUIREMENTS</b>			% Max.
1	Magnesium Oxide (% MgO)	10.0	4.06
2	Sulphur Trioxide (% SO <sub>3</sub> )	3.0	1.56
3	Sulphide Sulphur (% S)	1.5	0.21
4	Loss On Ignition (%)	5.0	1.42
5	Insoluble Residue (%)	4.0	0.27
6	Chlorides (%)	0.1	0.004
<b>PHYSICAL REQUIREMENTS</b>			
1	Fineness (M <sup>2</sup> /Kg)(Min)	225	371
2	Setting Time (minutes)		
	a) Initial(Min)	30	185
	b) Final(Max)	600	265
3	Soundness		
	a) Le-chatelier (mm)(Max)	10	1.0
	b) Auto Clave (%) (Max)	0.8	0.04
4	Compressive Strength (MPa)		
	a) 72 ± 1h (3 days)(Min)	16	24.3
	b) 168 ± 2h(7 days)(Min)	22	36.3
	c) 672 ± 4h (28 days)(Min)	33	56.9

Week No. 17

23.04.2014 – 29.04.2014

  
Authorized signatory

## AWARDS



**JSW Cement**  
AUTHORISED DISTRIBUTOR



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