

# INSULATING CASTABLES (VERMICULITE BASED)



## CUMICRETE

Light Weight

CHARACTERISTICS	UNIT	CUMICRETE CIV 101	CUMICRETE CIV 102	CUMICRETE CIV 224	CUMICRETE C 9 G
Maximum Service Temperature	°C	1100	1200	1100	1100
Maximum Grain Size	mm	6	6	6	6
Bulk Density Dried at 110°C/24 hrs.	gm/cc,max	0.85	1.10	0.90	1.30
Cold Crushing Strength	Kg/cm <sup>2</sup>				
Dried at 110°C/24 hrs	min.	12	20	15	20
Fired at 800°C/3 hrs	min.	4	15	10	15
Fired at 1100°C/3 hrs	min.	6	12	10at1000°C/3 hrs	15at1000°C/3 hrs
Permanent Linear Change	%				
Fired at 800°C/3 hrs	max.	± 1.00	+/-0.8	+/-0.5	+/-0.6
Fired at 1100°C/3 hrs	max.	± 1.60	+/-1.2	+/-1.0at1000°C/3 hrs	+/-1.0at1000°C/3 hrs
Thermal Conductivity	W/m <sup>2</sup> K				
Hot Face at 500°C	max.	0.16	0.26	0.17	0.36
Hot Face at 800°C	max.	0.20	0.30	0.20	0.40
Hot Face at 1000°C	max.	0.23	0.34	0.25	0.44
Recommended Water Addition (By wt.)	%	60 - 65	45 - 60	75 - 80	50 - 60
Chemical Analysis	%				
Al <sub>2</sub> O <sub>3</sub>	min.	32.0	32.0	42.0	31.0
SiO <sub>2</sub>	max.	-	-	25.0	32.0
Fe <sub>2</sub> O <sub>3</sub>	max.	8.50	6.00	4.50	6.00

Shelf Life : 9 months from the date of manufacture

Packing : In 25 Kg LDPE lined HDPE bags

Note : Water requirements indicated are based on laboratory test conditions.

Actual water requirement may vary subject to site conditions.

The properties shown are for vibratory cast material only unless specified otherwise.



**CARBORUNDUM UNIVERSAL LIMITED**  
SUPER REFRACTORIES



### Works

Plot No. 102 & 103, Sipcot Industrial Complex,  
Phase II, Ranipet 632 403, TN, India.  
Phone : +91 4172 244582, 244197  
Fax: +91 4172 244982.

Plot No. 35, 37, 48-51, Adhartal Industrial Estate,  
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www.cumi-murugappa.com/refractories/



# INSULATING CASTABLES (VERMICULITE BASED)



## CUMICRETE

Light Weight

CHARACTERISTICS	UNIT	CUMICRETE CIV 103	CUMICRETE CIV 103 HS	CUMICRETE CV 531
Maximum Service Temperature	°C	1100	1200	1100
Maximum Grain Size	mm	6	6	6
Bulk Density Dried at 110°C/24 hrs.	gm/cc,max	1.00	1.00	1.40
Cold Crushing Strength	Kg/cm <sup>2</sup>			
Dried at 110°C/24 hrs	min.	15	20	30
Fired at 800°C/3 hrs	min.	6	8	20
Fired at 1100°C/3 hrs	min.	10 at 1100°C/3 hrs	15 at 1200°C/3 hrs	20 at 1000°C/3 hrs
Permanent Linear Change	%			
Fired at 800°C/3 hrs	max.	+/-0.60	+/-0.60	+/-0.5
Fired at 1100°C/3 hrs	max.	+/- 1.0 at 1100°C/3 hrs	+/- 1.0	+/- 1.0 at 1000°C/3 hrs
Thermal Conductivity	W/m <sup>2</sup> K			
Hot Face at 500°C	max.	0.24	0.26	0.38
Hot Face at 800°C	max.	0.28	0.30	0.42
Hot Face at 1000°C	max.	0.32	0.33	0.45
Recommended Water Addition (By wt.)	%	50-60	50 - 60	40 - 50
Chemical Analysis	%			
Al <sub>2</sub> O <sub>3</sub>	min.	30.0	40.0	45.0
SiO <sub>2</sub>	max.	-	-	40.0
Fe <sub>2</sub> O <sub>3</sub>	max.	6.00	3.00	3.00

Shelf Life : 9 months from the date of manufacture

Packing : In 25 Kg LDPE lined HDPE bags

Note : Water requirements indicated are based on laboratory test conditions.

Actual water requirement may vary subject to site conditions.

The properties shown are for vibratory cast material only unless specified otherwise.



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# INSULATING CASTABLES (PERLITE BASED)



## CUMICRETE

Light Weight

CHARACTERISTICS	UNIT	CUMICRETE CIP 103	CUMICRETE CIP M 83 HS
Maximum Service Temperature	°C	1300	1300
Maximum Grain Size	mm	6	5
Bulk Density Dried at 110°C/24 hrs.	gm/cc,max	0.90	1.50
Cold Crushing Strength	Kg/cm <sup>2</sup>		
Dried at 110°C/24 hrs	min.	25	150
Fired at 800°C/3 hrs	min.	20	100 at 1100°C/3 hrs
Fired at 1300°C/3 hrs	min.	30	100
Permanent Linear Change	%, max.		
Fired at 800°C/3 hrs		+/-0.3	± 0.5 at 1100°C/3 hrs
Fired at 1300°C/3 hrs		+/- 1.0	± 0.8
Thermal Conductivity	W/m <sup>2</sup> K		
Hot Face at 500°C	max.	0.23	0.46
Hot Face at 800°C	max.	0.27	0.52
Hot Face at 1000°C	max.	0.30	0.55
Recommended Water Addition (By wt.)	%	35 - 50	25 - 35
Chemical Analysis	%		
Al <sub>2</sub> O <sub>3</sub>	min.	40.0	42.0
SiO <sub>2</sub>	max.	52.0	25.0
Fe <sub>2</sub> O <sub>3</sub>	max.	1.00	4.50

Shelf Life : 9 months from the date of manufacture

Packing : In 25 Kg LDPE lined HDPE bags

Note : Water requirements indicated are based on laboratory test conditions.

Actual water requirement may vary subject to site conditions.

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# INSULATING CASTABLES (INSULATING AGGREGATE BASED)



## CUMICRETE

Light Weight

CHARACTERISTICS	UNIT	CUMICRETE CII 104	CUMICRETE CII 105	CUMICRETE CII 106	CUMICRETE CII 107
Maximum Service Temperature	°C	1300	1300	1300	1300
Maximum Grain Size	mm	6	6	6	6
Bulk Density Dried at 110°C/24 hrs.	gm/cc,max	1.30	1.40	1.45	1.60
Cold Crushing Strength	Kg/cm <sup>2</sup>				
Dried at 110°C/24 hrs	min.	40	50	80	130
Fired at 800°C/3 hrs	min.	25	40	40	75
Fired at 1300°C/3 hrs		40	50	50	90
Permanent Linear Change	%				
Fired at 800°C/3 hrs	max.	+/-0.2	+/-0.2	+/-0.2	+/-0.20
Fired at 1300°C/3 hrs	max.	+/-1.0	+/-1.50	+/-0.6	+/-1.0
Recommended Water Addition (By wt.)	%	30 - 40	30 - 40	30 - 35	25 - 35
Thermal Conductivity	W/m <sup>2</sup> K				
Hot Face at 500°C	max.	0.38	0.40	0.46	0.51
Hot Face at 800°C	max.	0.42	0.44	0.50	0.55
Hot Face at 1000°C	max.	0.46	0.48	0.54	0.59
Chemical Analysis	%				
Al <sub>2</sub> O <sub>3</sub>	min.	35.0	35.0	42.0	43.0
Fe <sub>2</sub> O <sub>3</sub>	max.	3.50	1.50	1.50	1.50

Shelf Life : 9 months from the date of manufacture

Packing : In 50 Kg LDPE lined HDPE bags

Note : Water requirements indicated are based on laboratory test conditions.

Actual water requirement may vary subject to site conditions.

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# INSULATING CASTABLES (INSULATING AGGREGATE BASED)



## CUMICRETE

Light Weight

CHARACTERISTICS	UNIT	CUMICRETE CII 104 SPL	CUMICRETE CII 104 LI	CUMICRETE CII 104 SI	CUMICRETE HT
Maximum Service Temperature	°C	1300	1300	1200	1500
Maximum Grain Size	mm	6	6	6	6
Bulk Density Dried at 110°C/24 hrs.	gm/cc,max	1.20	1.20	1.30	1.55
Cold Crushing Strength	Kg/cm <sup>2</sup>				
Dried at 110°C/24 hrs	min.	40	50	25	80
Fired at 800°C/3 hrs	min.	25	30	25	-
Fired at 1100°C/3 hrs	min.	-	-	-	40
Fired at 1300°C/3 hrs		40	50	40	50
Permanent Linear Change	%				
Fired at 800°C/3 hrs	max.	+/-0.2	+/-0.2	+/-0.2	+/-0.2
Fired at 1100°C/3 hrs	max.	-	-	-	+/-0.50
Fired at 1300°C/3 hrs		+/-1.0	+/-1.00	+/-1.0	+/-1.50
Recommended Water Addition (By wt.)	%	30 - 40	30 - 40	30 - 40	25 - 35
Thermal Conductivity	W/m <sup>2</sup> K				
Hot Face at 500°C	max.	0.36	0.40	0.38	0.50
Hot Face at 800°C	max.	0.40	0.43	0.41	0.54
Hot Face at 1000°C	max.	0.43	0.45	0.45	0.59
Chemical Analysis	%				
Al <sub>2</sub> O <sub>3</sub>	min.	35.0	35.0	35.0	58.0
Fe <sub>2</sub> O <sub>3</sub>	max.	3.50	1.50	-	1.50

Shelf Life : 9 months from the date of manufacture

Packing : In 50 Kg LDPE lined HDPE bags

Note : Water requirements indicated are based on laboratory test conditions.

Actual water requirement may vary subject to site conditions.

The properties shown are for vibratory cast material only unless specified otherwise.



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# INSULATING CASTABLES (BUBBLE ALUMINA BASED)

CUMI

## CUMICRETE

### Light Weight

CHARACTERISTICS	UNIT	CUMICRETE CA 58
Maximum Service Temperature	°C	1800
Maximum Grain Size	mm	6
Bulk Density Dried at 110°C/24 hrs.	gm/cc,max	1.45
Cold Crushing Strength	Kg/cm <sup>2</sup>	
Dried at 110°C/24 hrs	min.	110
Fired at 1000°C/3 hrs	min.	75
Fired at 1550°C/3 hrs	min.	100
Permanent Linear Change	%	
Fired at 1000°C/3 hrs	max.	+/-0.20
Fired at 1550°C/3 hrs	max.	+/-0.50
Thermal Conductivity		
@ Hot face 540°C	W/m <sup>2</sup> K	1.10
@ Hot face 815°C	max.	1.00
@ Hot Face 1000°C		0.90
Recommended Water Addition (By wt.)	%	18 - 25
Chemical Analysis	%	
Al <sub>2</sub> O <sub>3</sub>	min.	94.0
SiO <sub>2</sub>	max.	0.30
Fe <sub>2</sub> O <sub>3</sub>	max.	0.10

CUMI recommends its high purity Insulating Castable Cumicrete CA 58 for temperatures upto 1800°C. It contains bubble alumina for high strength and moderate density. CA 58 has a very low silica content for superior performance in hydrogen atmospheres. Its advantages are

- Very high refractories
- Excellent chemical stability
- Low thermal conductivity values

The above properties make

CA 58 ideal for applications in

- Carbon Black Reactors
- Waste Heat Boilers
- Sulphur Recovery Unit
- Secondary Ammonia Reformer

Shelf Life : 9 months from the date of manufacture

Packing : In 25 Kg LDPE lined HDPE bags

Note : Water requirements indicated are based on laboratory test conditions.

Actual water requirement may vary subject to site conditions.

The properties shown are for vibratory cast material only unless specified otherwise.



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