

Competence in Technical Ceramics

Leveraging on its expertise in [designing](#), [composing](#), [shaping](#) and [firing](#) ceramics, **Imerys Ceramics** develops [technical ceramics](#) for specific businesses, such as heating and kiln construction, kiln car manufacturing, crucibles, and petrochemical.

Our large portfolio of [high quality body compositions](#) is a strong base to supply you with tailored technical kiln pieces in:

- [silicon carbide](#)
- [cordierite](#)
- [mullite](#)
- [alumina](#)

Do not hesitate to [contact us](#) with your challenges!

Each solution can be tailored to your needs thanks to our state-of-the-art design office.

OUR SOLUTIONS

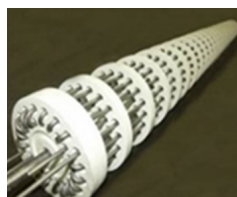
HEATING INDUSTRIES & KILNS CONSTRUCTION

PRODUCT		TUBS (OBE & COE)		FLANGE TUBS FOR KILN WALL			
MATERIAL		Dense mullite	Porous mullite	Mullite Alumina	Porous mullite	Mullite Alumina	
REFERENCE		DM60	E59	KF25E	E59	QA94	
PRODCUTION PROCESS		Extrusion		Extrusion & Bonding		Casting	
MAXIMUM SERVICE TEMPERATURE	°C	1450	1450	1400	1450	1550	
APPARENT DENSITY	g.cm ⁻³	2.64	2.50	2.25	2.50	3.3	
APPARENT POROSITY	%	< 0,7	24	25	24	< 10	
MOR 3-POINT AT 20°C	N/mm²	> 110	38	23	38	38	
THERMAL EXPANSION AT 1000°C	10 ⁻⁶ x K ⁻¹	5.9	5.9	5.5	5.9	7.3	
THERMAL CONDUCTIVITY AT 20°C	W/mK	-	4.3	4.0	4.3	10	
HIGH TEMPERATURE CREEP RESISTANCE		Very good		Very good			
THERMAL CHOCK RESISTANCE		Very good		Very good			
CHEMICAL COMPOSITION	Al ₂ O ₃	%	60	80	64	80	94
	SiO ₂		37	18	34	18	6
	Alkali		3	2	-	2	-



HEATING INDUSTRIES & KILNS CONSTRUCTION

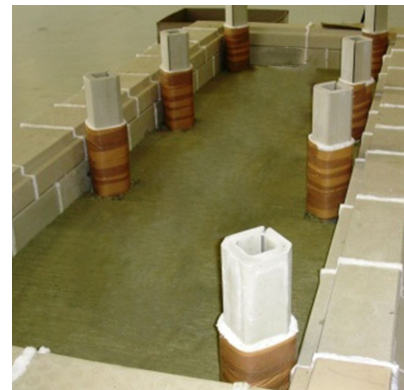
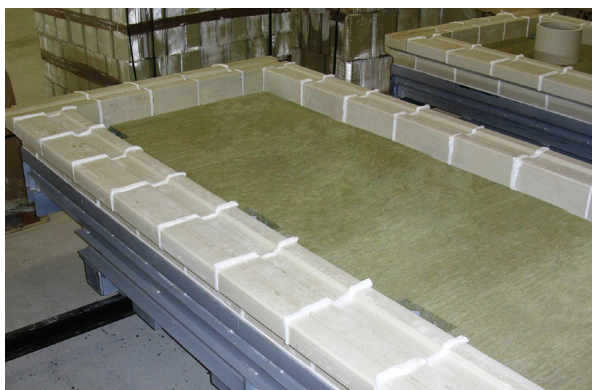
PRODUCT		RESISTANCE HOLDERS			CUPLOCKS TO FIX FIBER OR MAINTAIN ELECTRICAL WIRE			BURNERS NOZZLES		
MATERIAL		Cordierite Mullite		Mullite Alumina	Mullite Alumina			Si-SiC	S-SiC	
REFERENCE		R1E	Cormull C1E	E59P	KF25P	E59P	MAT1	SC 90G	SC 100SG	
PRODCUTION PROCESS		Extrusion		Pressing	Pressing			Casting		
MAXIMUM SERVICE TEMPERATURE	°C	1300	1300	1450	1400	1450	1500	1350	1750	
APPARENT DENSITY	g.cm ⁻³	2.17	2.05	2.40	2.25	2.40	2.30	3.05	3.10	
APPARENT POROSITY	%	7	22	21	25	21	27	< 1	0	
MOR 3-POINT AT 20°C	N/mm²	32	19	< 15	13	13	38	220	200	
THERMAL EXPANSION AT 1000°C	10 ⁻⁶ x K ⁻¹	2.9	2.8	6.0	5.5	6.0	6.5	4.0	4.5	
THERMAL CONDUCTIVITY AT 20°C	W/mK	3.3	1.3	4.0	4.0	4.0	4.0	130.0	130.0	
HIGH TEMPERATURE CREEP RESISTANCE		Very good			Very good			Excellent		
THERMAL CHOCK RESISTANCE		Very good			Very good			Excellent		
CHEMICAL COMPOSITION	Al ₂ O ₃	%	37	38	80	64	80	86	-	-
	SiO ₂		50	50	18	34	18	12	-	-
	Alkali		-	-	2	-	2	2	-	-
	MgO		7	7	-	-	-	-	-	-
	SiC		-	-	-	-	-	-	80	> 99
	Si ₃ N ₄		-	-	-	-	-	-	-	-
	Free Si		-	-	-	-	-	-	20	-



OUR SOLUTIONS

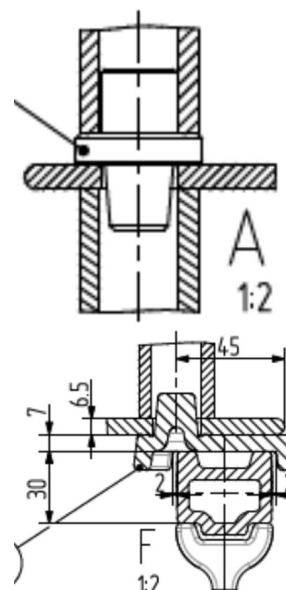
KILN CAR CONSTRUCTION

PRODUCT			PERIMETER BLOCKS		SUPPORTS FOR KILN CARS AND/OR BEAMS				
MATERIAL			Cordierite Mullite		Cordierite Mullite			Mullite	N-SiC
REFERENCE			Cormull C1E	QC3	Cormull C1E	Aptakorit CME	Aptakorit HT	Aptamull 60	Aptasinit
PRODCUTION PROCESS			Extrusion	Casting	Extrusion			Pressing	Casting
MAXIMUM SERVICE TEMPERATURE		°C	1300	1300	1300	1350	1300	1400	1550
APPARENT DENSITY		g.cm ⁻³	2.1	2.00	2.1	2.0	2.1	2.1	2.85
APPARENT POROSITY		%	21.5	23	21.5	23	24	29	< 1
MOR 3-POINT AT 20°C		N/mm²	19	18	19	19	19	22	190
THERMAL EXPANSION AT 1000°C		10 ⁻⁶ x K ⁻¹	2.8	2.8	2.8	2.2	3.7	5.2	4.5
THERMAL CONDUCTIVITY AT 20°C		W/mK	1.0	4.2	1.0	1.0	1.0	1.3	45.0
SPECIFIC HEAT AT COEFFICIENT AT 20°C		J/kgK	-	1.3	-	-	900	-	980
HIGH TEMPERATURE CREEP RESISTANCE			Very good		Very good			Very good	
THERMAL CHOCK RESISTANCE			Very good		Very good			Very good	
CHEMICAL COMPOSITION	Al ₂ O ₃	%	38	38	38	40	44	57.7	-
	SiO ₂		50	51	50	48.5	48.1	39.7	-
	MgO		7.0	8.0	7.0	7.5	4.0	-	-
	SiC		-	-	-	-	-	-	70
	Si ₃ N ₄		-	-	-	-	-	-	-



KILN CAR CONSTRUCTION

PRODUCT		CONNECTING ELEMENTS BETWEEN SUPPORTS/BEAMS/SLABS				
MATERIAL		Cordierite Mullite		Mullite	N-SiC	
REFERENCE		Aptakorit CM1	QC3	Thermomull 60	Aptasinit	
PRODCUTION PROCESS		Pressing	Casting	Injection moulding	Casting	
MAXIMUM SERVICE TEMPERATURE	°C	1350	1300	1450	1550	
APPARENT DENSITY	g.cm ⁻³	2.04	2.00	2.45	2.85	
APPARENT POROSITY	%	22	23	21.5	< 1	
MOR 3-POINT AT 20°C	N/mm²	14.7	18	82	190	
THERMAL EXPANSION AT 1000°C	10 ⁻⁶ x K ⁻¹	2.3	2.8	5.5	4.5	
THERMAL CONDUCTIVITY AT 20°C	W/mK	1.0	4.2	-	45.0	
SPECIFIC HEAT AT COEFFICIENT AT 20°C	J/kgK	900	1.3	-	980	
HIGH TEMPERATURE CREEP RESISTANCE		Very good		Very good		
THERMAL CHOCK RESISTANCE		Very good		Very good	Excellent	
CHEMICAL COMPOSITION	Al ₂ O ₃	%	38	38	71.5	-
	SiO ₂		50	51	26.5	-
	MgO		7.6	8.0	-	-
	SiC		-	-	-	70
	Si ₃ N ₄		-	-	-	30
	Free Si		-	-	-	-

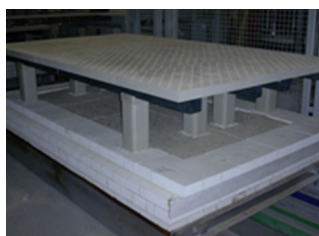


OUR SOLUTIONS

KILN CAR CONSTRUCTION

PRODUCT			SLABS FOR KILN HEARTH				
MATERIAL			Cordierite Mullite			R-SiC	N-SiC
REFERENCE			Cormull C1E	C1	Aptakorit CM 1	SC100RG	Aptasinit
PRODCUTION PROCESS			Extrusion	Pressing	Pressing	Casting	Casting
MAXIMUM SERVICE TEMPERATURE		°C	1300	1300	1350	1600/2000*	1550
APPARENT DENSITY		g.cm ⁻³	2.1	2.1	2.04	2.70	2.85
APPARENT POROSITY		%	21.5	20	22	16	< 1
MOR 3-POINT AT 20°C		N/mm ²	19	13	14.7	84	190
THERMAL EXPANSION AT 1000°C		10 ⁻⁶ x K ⁻¹	2.8	2.8	2.3	4.8	4.5
THERMAL CONDUCTIVITY AT 20°C		W/mK	1.0	1.0	1.0	35	45.0
SPECIFIC HEAT AT COEFFICIENT AT 20°C		J/kgK	-	-	900	-	980
HIGH TEMPERATURE CREEP RESISTANCE			Very good			Excellent	
THERMAL CHOCK RESISTANCE			Very good			Excellent	
CHEMICAL COMPOSITION	Al ₂ O ₃	%	38	39	38	-	-
	SiO ₂		50	49	50	-	-
	Alkali		-	-	-	-	-
	MgO		7.0	6.5	7.6	-	-
	SiC		-	-	-	> 99	70
	Si ₃ N ₄		-	-	-	-	30

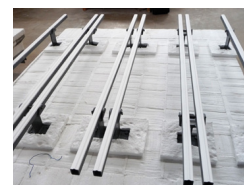
* 2000°C under protective atmosphere (not oxidizing)



KILN CAR CONSTRUCTION

PRODUCT		BEAMS			
MATERIAL		Si-SiC	N-SiC	R-SiC	
REFERENCE		SC90S	Aptasinit	SC100RG	
PRODCUTION PROCESS		Extrusion	Casting		
MAXIMUM SERVICE TEMPERATURE	°C	1350	1550	1600/2000*	
APPARENT DENSITY	g.cm ⁻³	3.00	2.85	2.70	
APPARENT POROSITY	%	< 1	< 1	16	
MOR 3-POINT AT 20°C	N/mm ²	200	190	84	
THERMAL EXPANSION AT 1000°C	10 ⁻⁶ x K ⁻¹	4.0	4.5	4.8	
THERMAL CONDUCTIVITY AT 20°C	W/mK	-	45.0	35	
SPECIFIC HEAT AT COEFFICIENT AT 20°C	J/kgK	-	980	-	
HIGH TEMPERATURE CREEP RESISTANCE		Excellent			
THERMAL CHOCK RESISTANCE		Excellent			
CHEMICAL COMPOSITION	SiC	%	82	70	> 99
	Si ₃ N ₄		-	30	-
	Free Si		18	-	-

* 2000°C under protective atmosphere (not oxidizing)



OUR SOLUTIONS

CRUCIBLES

INDUSTRY			GLASS	FOUNDRY AND MEDICAL APPLICATIONS		
MATERIAL			Mullite Fused Silica	Cordierite Mullite	Mullite Alumina	
REFERENCE			Aptasial MG	QC3	QA40	QAT4
PRODUCTION SHAPING			Casting			
MAXIMUM SERVICE TEMPERATURE		°C	1250	1300	1300	1400
APPARENT DENSITY		g.cm ⁻³	2.11	2.00	2.00	2.50
APPARENT POROSITY		%	22	23	20	27
MOR 3-POINT AT 20°C		N/mm²	12	< 20	< 20	34
THERMAL EXPANSION AT 1000°C		10 ⁻⁶ x K ⁻¹	2.0	2.8	5.2	6.5
THERMAL CONDUCTIVITY AT 20°C		W/mK	-	4.2	-	4.25
SPECIFIC HEAT AT COEFFICIENT AT 20°C		J/kgK	-	1.3	-	-
HIGH TEMPERATURE CREEP RESISTANCE			Very good	Very good	Very good	
THERMAL CHOCK RESISTANCE			Very good	Very good	Very good	
CHEMICAL COMPOSITION	Al ₂ O ₃	%	43	38	40	84
	SiO ₂		55	51	55	14
	Alkali		-	-	2	-
	MgO		-	8	-	-



PETROCHEMICAL INDUSTRY

PRODUCT			FERRULES		BALLS SUPPORT FOR CATALYST
MATERIAL			Mullite Alumina		Stoneware
REFERENCE			QAT4	QA94	Gresil 8A
PRODUCTION SHAPING			Casting		Granulation
MAXIMUM SERVICE TEMPERATURE		°C	1400	1550	1200
APPARENT DENSITY		g.cm ⁻³	2.50	3.30	2.30
APPARENT POROSITY		%	27	< 10	< 5
MOR 3-POINT at 20°C		N/mm²	34	38	-
MODULUS OF COMPRESSION AT 20°C		N/mm131	-	-	> 110
THERMAL EXPANSION at 1000°C		10 ⁻⁶ x K ⁻¹	6	7.3	-
THERMAL CONDUCTIVITY 20°C		W/mK	4.3	10.0	-
HIGH TEMPERATURE CREEP RESISTANCE			Very good	Very good	Very good
THERMAL CHOCK RESISTANCE			Very good	Very good	Very good
CHEMICAL COMPOSITION	Al ₂ O ₃	%	84	94	22
	SiO ₂		14	6	69



