



**NISCHE SOLUTIONS**  
specialized industrial products

# Insulating Firebricks ASTM Group 23-25

			TDM 23L	TDM 23	TDM 23HS	TDM 24	TDM 25	TDM 25HS
<b>Classification Group</b>	ASTM C 155		23	23	23	-	-	-
	ISO 2245		125-0.5-L	125-0.6-L	125-0.9	130-0.7-L	135-0.8-L	135-1.1
<b>Classification Temperature</b>		°C	1260	1260	1260	1315	1380	1380
		°F	2300	2300	2300	2400	2500	2500
<b>Density</b>	ASTM C 134	kg/m <sup>3</sup>	500	590	670	670	800	1100
		lb/ft <sup>3</sup>	31	37	42	42	50	69
<b>Cold Crushing Strength</b>	ASTM C 133	MPa	1.0	1.2	2.1	2.1	2.5	Flat 6.0 Edge 9.0
		psi	145	174	305	305	362	Flat 870 Edge 1305
	ASTM C 133	MPa	0.7	1.0	1.3	1.3	1.4	3.1
		psi	101	145	189	189	203	450
<b>Permanent Linear Change after 24hrs. soaking at Temperature</b>	ASTM C 210	%	-0.1	-0.1	-0.2	-0.5	-0.5	-0.5
		24	°C °F	1230 (2250)	1230 (2250)	1230 (2250)	1285 (2350)	1350 (2450)
<b>Reversible Linear Thermal Expansion</b>		% (max.)	0.6	0.6	0.6	0.6	0.7	0.5
<b>Thermal Conductivity (ASTM C 182) at mean Temperature °C (°F)</b>	200 (392)	W/mK  (BTU-in/ hr.ft <sup>2</sup> .°F)	0.13 (0.90)	0.16 (1.11)	0.18 (1.25)	0.18 (1.25)	0.20 (1.39)	0.29 (2.01)
	400 (752)		0.15 (1.04)	0.19 (1.32)	0.21 (1.46)	0.21 (1.46)	0.21 (1.46)	0.32 (2.22)
	600 (1112)		0.17 (1.18)	0.23 (1.59)	0.25 (1.73)	0.25 (1.73)	0.23 (1.59)	0.36 (2.5)
<b>(ASTM C 182) °C (°F)</b>	800 (1472)		0.19 (1.32)	0.28 (1.94)	0.30 (2.08)	0.30 (2.08)	0.27 (1.87)	0.40 (2.77)
	1000 (1832)		0.22 (1.53)	0.33 (2.29)	0.35 (2.43)	0.35 (2.43)	0.32 (2.22)	0.45 (3.12)
	1200 (2192)		-	-	-	-	-	-
<b>Chemical Analysis</b>	Al <sub>2</sub> O <sub>3</sub>	%	43.0	43.0	43.0	43.0	48.0	48.0
	SiO <sub>2</sub>		51.6	51.6	51.6	51.6	47.6	47.6
	Fe <sub>2</sub> O <sub>3</sub>		1.0	1.0	1.0	1.0	1.0	1.0
	TiO <sub>2</sub>		1.0	1.0	1.0	1.0	1.0	1.0
	CaO + MgO		1.6	1.6	1.6	1.6	0.8	0.8
	Na <sub>2</sub> O + K <sub>2</sub> O		1.8	1.6	1.8	1.8	1.6	1.6
<b>Dimensional Tolerances</b>	L x W x T	mm	±1	±1	±1	±1	±1	±1

**Availability and Packaging:**

All standard brick sizes (lie ISO: 230x114x64, 230x114x76mm / 220x110x60mm / US 9"x4 1/2"x2 1/2") and slabs up to 640x450x76mm are available! TDM Insulating Firebricks are packed lose on shrink film wrapped pallets. Cartonage packaging on request is possible.

**Note:**

All technical data given in our brochures are average values on the basis of proven testing methods and are subject to generally applicable production tolerances. They can be modified without prior notice (e.g. due to the new raw materials or to technical development). Upon request we will send you our Material Safety Data Sheets.

			TDM 26	TDM 26RA	TDM 26HS	TDM 27	TDM 28	TDM 30	TDM 32
	ASTM C 155		26	26	-	-	28	30	32
	ISO 2245		140-0.8-L	140-0.8-L	140-1.0	145-0.8-L	150-0.9-L	160-1.0-L	170-1.2-L
		°C	1430	1430	1430	1480	1540	1650	1760
		°F	2600	2600	2600	2700	2800	3000	3150
	ASTM C 134	kg/m <sup>3</sup>	800	790	900	850	880	1000	1200
		lb/ft <sup>3</sup>	50	49	56	53	55	62	75
	ASTM C 133	MPa	2.2	2.0	4.0	2.3	2.5	2.5	3.5
		psi	319	290	580	333	362	362	507
	ASTM C 133	MPa	1.5	1.3	2.5	1.5	1.6	1.7	2.0
		psi	217	189	362	217	232	246	290
<b>after 24hrs, soaking at Temperature</b>	ASTM C 210	%	-0.4	-0.2	-0.4	-0.4	-0.4	-0.3	-0.9
		°C °F	1400 (2550)	1400 (2550)	1400 (2550)	1450 (2650)	1510 (2750)	1620 (2950)	1730 (3150)
		% (max.)	0.7	0.7	0.6	0.7	0.6	0.9	1.1
<b>at mean Temperature °C (°F)</b>	200 (392)	W/mK (BTU-in/ hr,ft <sup>2</sup> ,°F)	-	-	-	-	-	-	-
	400 (752)		0.21 (1.46)	0.27 (1.87)	0.29 (2.01)	0.30 (2.08)	0.31 (2.15)	0.40 (2.77)	0.49 (3.40)
	600 (1112)		0.23 (1.59)	0.30 (2.08)	0.32 (2.22)	0.32 (2.22)	0.33 (2.29)	0.41 (2.84)	0.50 (3.47)
	800 (1472)		0.28 (1.94)	0.32 (2.22)	0.35 (2.43)	0.33 (2.29)	0.35 (2.43)	0.43 (2.98)	0.51 (3.54)
	1000 (1832)		0.33 (2.29)	0.35 (2.43)	0.38 (2.63)	0.36 (2.50)	0.38 (2.63)	0.44 (3.05)	0.53 (3.67)
	1200 (2192)		0.36 (2.50)	0.39 (2.70)	0.41 (2.84)	0.39 (2.70)	0.41 (2.84)	0.47 (3.26)	0.54 (3.74)
	Al <sub>2</sub> O <sub>3</sub>	%	50.0	59.0	50.0	58.0	64.0	70.0	77.0
	SiO <sub>2</sub>		15.9	37.8	15.9	39.1	33.2	27.5	20.9
	Fe <sub>2</sub> O <sub>3</sub>		0.9	0.7	0.9	0.7	0.7	0.65	0.6
	TiO <sub>2</sub>		1.0	0.7	1.0	0.7	0.7	0.75	0.5
	CaO + MgO		0.7	0.5	0.7	0.7	0.5	0.3	0.3
	Na <sub>2</sub> O + K <sub>2</sub> O		1.5	1.3	1.5	1.5	0.9	0.8	0.7
<b>Dimensional Tolerances</b>	L x W x T	mm	±1	±1	±1	±1	±1	±1	±1

#### Availability and Packaging:

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