

## CASTABLES for MINERAL PROCESSING CEMENT, LIME, ORE

### CONVENTIONAL CEMENT

Products	Chemistry (%)		Density (1500°F)		C.C.S.		Temp. Limit		Installation Method
					815°C	1500°F			
	Al <sub>2</sub> O <sub>3</sub>	SiO <sub>2</sub>	g/cm <sup>3</sup>	lb/ft <sup>3</sup>	Mpa	psi	°C	°F	Method
TUFFLOOR	34.1	44.5	2.11	132	48.92	7,100	649	1200	cast
TUFFCRETE 2800	44.4	48	2.27	142	82.68	12,000	1538	2800	vib cast, pump, shotcrete
CAST 3400	95.3	0.1	2.77	173	75.79	11,000	1871	3400	cast

### LOW CEMENT

Products	Chemistry (%)				Density (1500°F)		C.C.S. (815°C)		Temp. Limit		Installation Method
	Al <sub>2</sub> O <sub>3</sub>	SiO <sub>2</sub>	ZrO <sub>2</sub>	SiC	g/cm <sup>3</sup>	lb/ft <sup>3</sup>	Mpa	psi	°C	°F	
LCF 798 P	61.5	35			2.74	171	59.94	8,700	1704	3100	vib cast, pump
DURACON 28	46.2	48.1			2.23	139	53.74	7,800	1538	2800	vib cast
DURACON 28-10	41	43.6		9.7	2.26	141	59.25	8,600	1538	2800	vib cast
DURACON 30	47.2	46.3			2.34	146	68.80	9,985	1649	3000	vib cast
DURACON 32	63.1	31.6			2.55	159	106.17	15,410	1760	3200	vib cast
DURACON 70 C	69.2	25.6			2.71	169	113.69	16,500	1760	3200	vib cast
DURACON NR-SA	77	18.1			2.77	173	87.16	12,650	1760	3200	vib cast
DURACON 86	87	8.7			2.93	183	109.55	15,900	1788	3250	vib cast
TUFF-FLO FSM	34.8	61.3			2.18	136	54.29	7,880	1204	2200	vib cast, pump
TUFFCRETE FS	15.6	81.8			2.00	125	82.68	12,000	1204	2200	vib cast, pump, shotcrete
TUFFCRETE 47	47.1	46.5			2.21	138	82.68	12,000	1538	2800	vib cast, pump, shotcrete
TUFFCRETE ARZ	43.9	44.3	1.1	4.9	2.32	145	89.57	13,000	1649	3000	vib cast, pump, shotcrete
TUFFCRETE 60 A SR	59.6	36.2			2.58	161	104.73	15,200	1704	3100	vib cast, pump, shotcrete



TUFFCRETE 60 M	60.5	34.3			2.52	157	106.80	15,500	1704	3100	vib cast, pump, shotcrete
TUFFCRETE 60 MZ	58.1	34.1	2.7		2.56	160	75.79	11,000	1704	3100	vib cast, pump, shotcrete
TUFFCRETE 604 Z	59.5	32.3	3.6		2.52	157	82.68	12,000	1649	3000	vib cast, pump, shotcrete
TUFFCRETE 60 M ARZ	54.5	33.8	1.1	5	2.58	161	146.76	21,300	1704	3100	vib cast, pump, shotcrete
TUFFCRETE 60 X	60.3	33.9			2.48	155	92.33	13,400	1649	3000	vib cast, pump, shotcrete
TUFFCRETE 60 SiC	21.3	12.1		63.6	2.60	162	113.69	16,500	1649	3000	vib cast, pump, shotcrete
TUFFCRETE 28 SiC Z	44.4	21.5	1.1	28.3	2.63	164	126.09	18,300	1704	3100	vib cast, pump, shotcrete
TUFFCRETE 63 X	62.4	31.4			2.53	158	103.35	15,000	1649	3000	vib cast, pump, shotcrete
TUFFCRETE 65 M	64.8	30.5			2.61	163	138.39	20,085	1704	3100	vib cast, pump, shotcrete
TUFFCRETE 66 M	64.5	30.2			2.58	161	78.55	11,400	1704	3100	vib cast, pump, shotcrete
TUFFCRETE 70 ABR	69.6	24.8			2.69	168	144.69	21,000	1760	3200	vib cast, pump, shotcrete
TUFFCRETE 70 M	71.3	23.6			2.66	166	158.47	23,000	1760	3200	vib cast, pump, shotcrete
TUFFCRETE 70 X	68	25.8			2.58	161	98.53	14,300	1649	3000	vib cast, pump, shotcrete
TUFFCRETE 72 M	71.5	22.6			2.60	162	112.31	16,300	1704	3100	vib cast, pump, shotcrete
TUFFCRETE 733	65	24.5			2.58	161	83.37	12,100	1566	2850	vib cast, pump, shotcrete
TUFFCRETE 74	74.3	20.2			2.69	168	67.18	9,750	1760	3200	vib cast, pump, shotcrete



TUFFCRETE 76	77.4	17.4			2.74	171	82.68	12,000	1760	3200	vib cast, pump, shotcrete
TUFFCRETE 86	85.4	10.1			2.82	176	124.02	18,000	1788	3250	vib cast, pump, shotcrete


**Shotcrete data**
**ULTRA LOW CEMENT**

Products	Chemistry (%)				Density (1500°F)		C.C.S.		Temp. Limit		Installation Method
	Al <sub>2</sub> O <sub>3</sub>	SiO <sub>2</sub>	ZrO <sub>2</sub>	SiC	g/cm <sup>3</sup>	lb/ft <sup>3</sup>	815°C	1500°F	°C	°F	
							Mpa	psi			
CW 709	78	5.1		11.5	3.20	200	0.00		1704	3100	vib cast, pump, shotcrete
TUFFCRETE 61 A ULC	61	35.5			2.61	163	70.28	10,200	1704	3100	vib cast, pump, shotcrete
TUFFCRETE 90	90.4	8.2			2.98	186	62.01	9,000	1871	3400	vib cast
ULTRACON 34 C	92.8	6.2			3.03	189	73.03	10,600	1760	3200	vib cast
ULTRACON 95	94.4	5			2.98	186	0.00		1871	3400	vib cast

**NO CEMENT**

Products	Chemistry (%)				Density (1500°F)		C.C.S.		Temp. Limit		Installation Method
	Al <sub>2</sub> O <sub>3</sub>	SiO <sub>2</sub>	ZrO <sub>2</sub>	SiC	g/cm <sup>3</sup>	lb/ft <sup>3</sup>	815°C	1500°F	°C	°F	
							Mpa	psi			
NANO-TEK FS P	0.2	99.5			1.84	115	31.69	4,600	1204	2200	vib cast, pump, shotcrete
NANO-TEK 61 HS	61.4	35.2			2.45	153	97.84	14,200	1704	3100	vib cast, pump, shotcrete
NANO-TEK 60 Z HS	58.4	35.5	2.8		2.52	157	99.28	14,410	1704	3100	vib cast, pump, shotcrete
NANO-TEK 55 A SR HS	56	36.3	1.3	4.9	2.53	158	62.35	9,050	1704	3100	vib cast, pump, shotcrete



NANO-TEK 805 ARZ	48.4	34.7	5.7	8.1	2.50	156	84.23	12,225	1704	3100	vib cast, pump, shotcrete
NANO-TEK 90	89.6	9.3			2.90	181	30.32	4,400	1704	3100	vib cast, pump, shotcrete
NANO-TEK 75 SiC	17.1	5.2		74.9	2.66	166	35.66	5,175	1649	3000	vib cast, pump, shotcrete
QUICK-FIRE 55	55.4	36.7			2.32	145	15.36	2,230	1593	2900	vib cast
QUICK-FIRE 88	88.2	3.9			2.74	171	18.95	2,750	1649	3000	vib cast
QUICK-FIRE 90	89.1	2.1			0.00		36.93	5,360	1704	3100	vib cast
STACKLINE B PC	98.1	0.2			2.18	136	58.57	8,500	816	1500	vib cast, pump, shotcrete

### HIGH STAINLESS FIBER CONTENT

Products	Chemistry (%)				Density (1500°F)		C.C.S.		Temp. Limit		Installation Method
	Al <sub>2</sub> O <sub>3</sub>	SiO <sub>2</sub>	ZrO <sub>2</sub>	SiC	g/cm <sup>3</sup>	lb/ft <sup>3</sup>	815°C	1500°F	°C	°F	
							Mpa	psi			
ARMORMAX 28 SiC	45.4	21.8	1	27.3	2.69	168	82.68	12,000	1427	2600	vib cast, pump, shotcrete
ARMORMAX 608	59.9	27.1		8.2	2.63	164	103.96	15,089	1316	2400	vib cast, pump, shotcrete
ARMORMAX 70 SR	70.1	25.5			2.66	166	117.13	17,000	1427	2600	vib cast, pump, shotcrete
ARMORMAX NR-SA	82.4	11.9			3.00	187	185.34	26,900	1427	2600	vib cast, pump, shotcrete
ARMORMAX 85	84.4	10.5			2.92	182	175.70	25,500	1427	2600	vib cast, pump, shotcrete
ARMOMAX 90 SR	89.2	7.8			3.00	187	113.69	16,500	1427	2600	vib cast, pump, shotcrete
ARMORMAX AZS 5 HZR	40.9	28.7	26.8		3.16	197	112.72	16,360	1316	2400	vib cast, pump, shotcrete



**INSULATING MIXES CAST**

Products	Chemistry (%)				Density (1500°F)		C.C.S.		Temp. Limit		Installation Method
							815°C	1500°F			
	Al <sub>2</sub> O <sub>3</sub>	SiO <sub>2</sub>	ZrO <sub>2</sub>	SiC	g/cm <sup>3</sup>	lb/ft <sup>3</sup>	Mpa	psi	°C	°F	
INSULMIX 19 L	33.7	25.5			0.30	19	0.34	50	1038	1900	cast, gun
INSULMIX 20	23.9	52.3			0.48	30	1.72	250	1093	2000	cast, gun
INSULMIX 20 HS	38.2	40.9			0.98	61	4.82	700	1093	2000	cast, gun
INSULMIX 20 LI	36.7	42.5			0.00		0.00		1093	2000	cast, gun
INSULMIX 23	42.6	35			0.80	50	2.07	300	1260	2300	cast, gun
INSULMIX 24	31.6	43.9			0.96	60	4.13	600	1316	2400	cast, gun
INSULMIX 24 HS	46.5	36.4			0.96	60	4.82	700	1316	2400	cast, gun
INSULMIX 24-75	20.7	59.3			1.23	77	1.55	225	1316	2400	cast, gun
INSULMIX 3A	40	39.1			0.00		0.00		1316	2400	cast, gun
INSULMIX 25 HS	29.3	51.9			1.47	92	19.29	2,800	1371	2500	cast, gun
INSULMIX 26 LI	41.3	43			1.44	90	8.27	1,200	1427	2600	cast, gun
INSULMIX 60 LI P	39.7	47.7			1.03	64	4.82	700	1371	2500	cast, pump, shotcrete
INSULMIX 80 LI P	46.8	42.4			1.28	80	8.27	1,200	1427	2600	cast, pump, shotcrete

