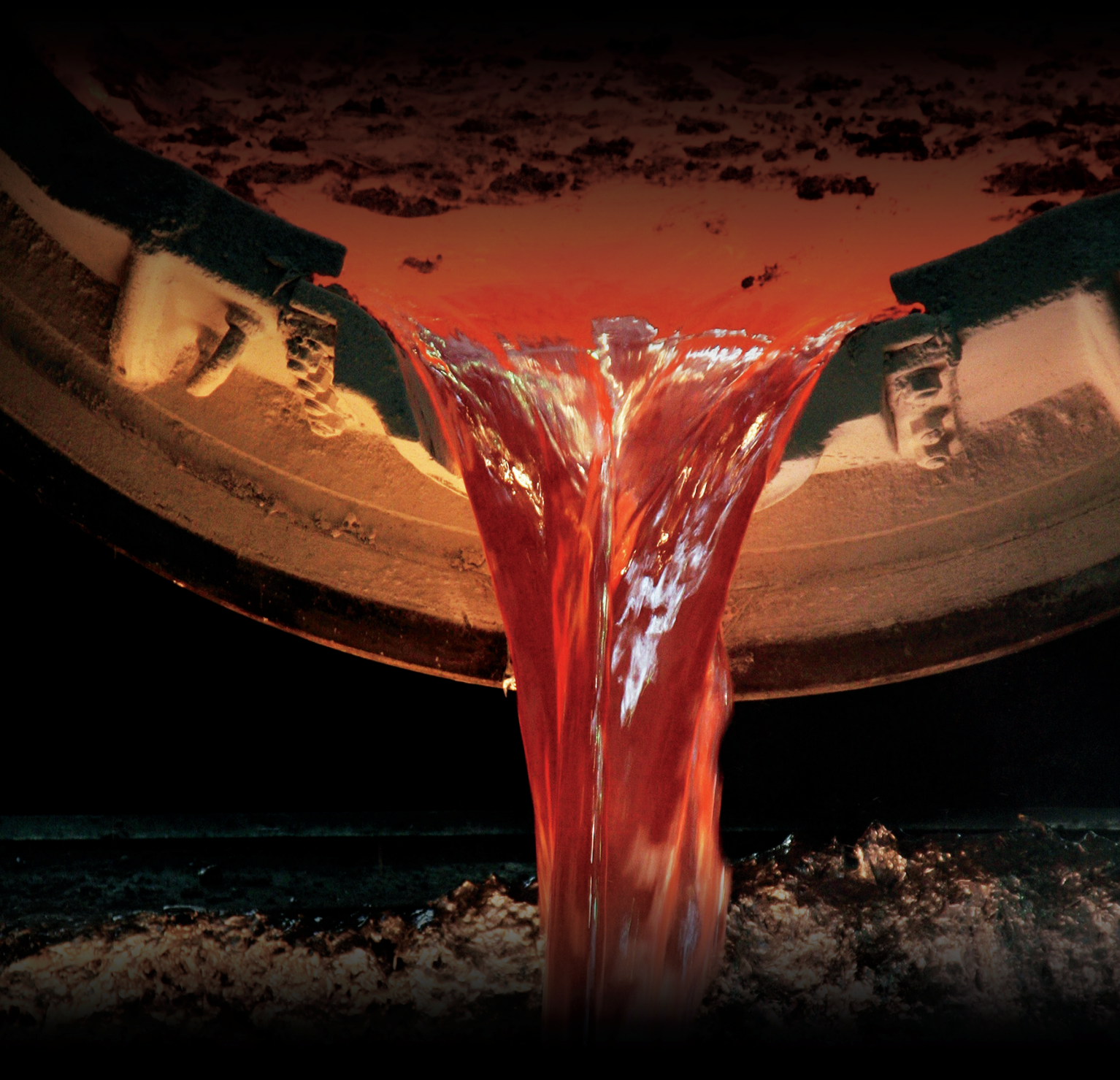


MONOLITHIC REFRACTORIES ALUMINUM



DIE CUT

Monolithic Refractories for Metalcasting, Minerals Processing, Power Generation and Petrochemical Industries

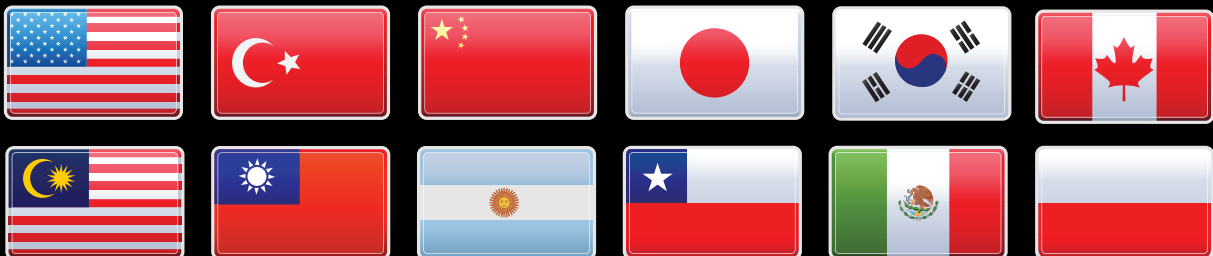
United Refractories Company (URC) designs innovative, durable refractories focusing on customer specific needs and applications. Our technically driven products manufactured at our UNI-REF, Inc. (URI) facility include our UNI-RAM VR dry vibratables for induction furnaces, cutting edge cupola products, Rapid Fire accelerated dry-out technology, and UNI-SHOT/UNI-BRADE abrasion resistant refractory products. 40 years providing unparalleled value through outstanding quality, proven technology and customer focused service.



Quality means more than our ISO9001:2008 certification - we go even further. It's not just our standard, quality is our commitment.

Visit us at www.unitedrefractoriesco.com to learn more.

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ALUMINUM REFRACTORIES
REVERBERATORY
STACK MELTER
ROTARY, DIE CASTING
TRANSFER & MAINTENANCE

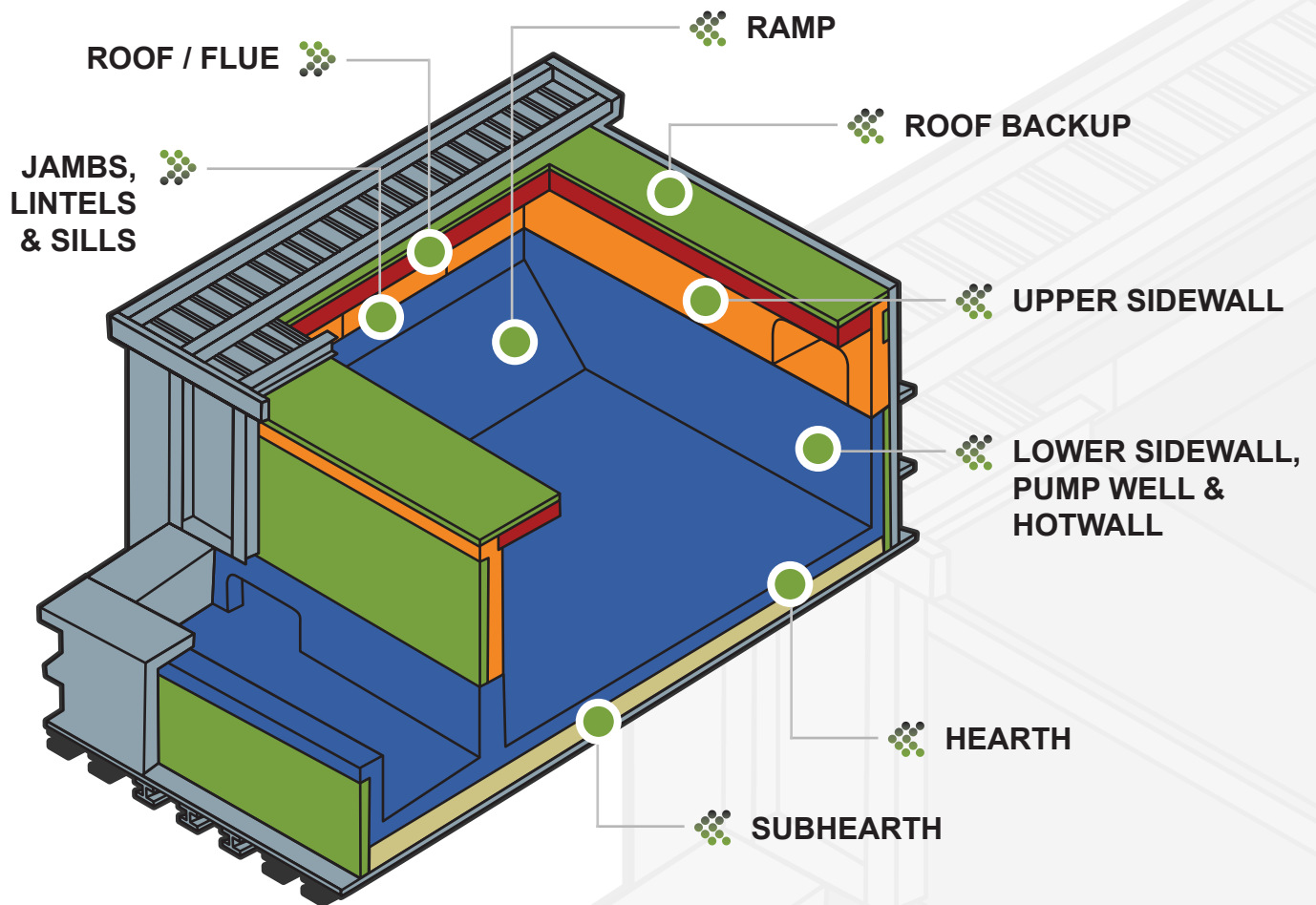


REVERBERATORY

STACK MELTER

ROTARY, DIE CASTING, TRANSFER & MAINTENANCE

ALUMINUM REFRACTORIES REVERBERATORY



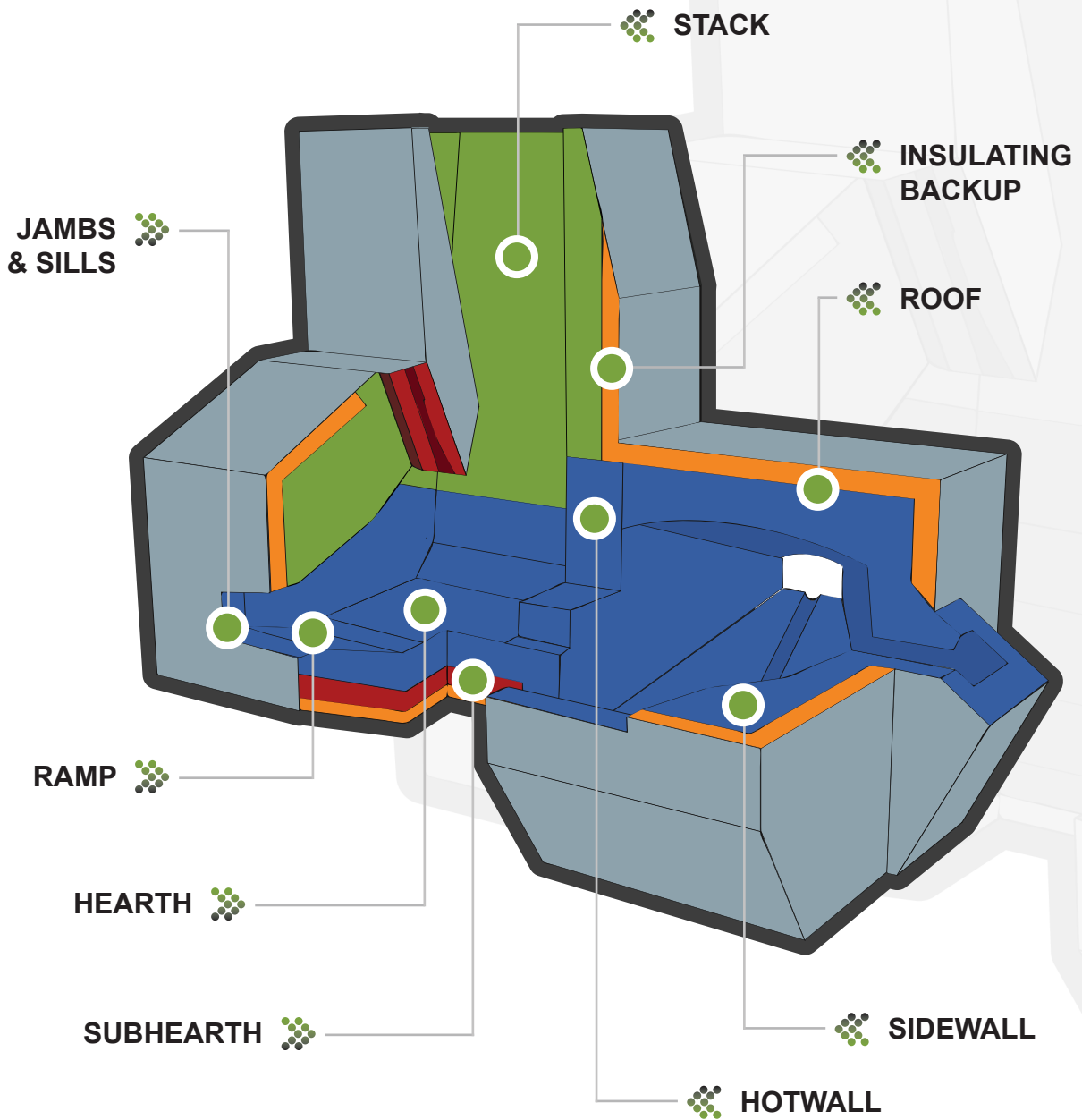
REVERBERATORY

| LOWER SIDEWALL, PUMP WELL, HOTWALL | MAXIMUM TEMP. | | MATERIAL REQ'D | | CHEMICAL ANALYSIS % | | | |
|---------------------------------------|---------------|------|---------------------|-------------------|--------------------------------|------------------|-----|----------------------|
| | °F | °C | Lbs/ft ³ | Kg/m ³ | Al ₂ O ₃ | SiO ₂ | CaO | Other |
| UNI-PUMP LC-80HSA | 3200 | 1760 | 183 | 2930 | 82.5 | 11.8 | 2.1 | 3.6 |
| UNI-CAST LC-80HSA | 3200 | 1760 | 183 | 2930 | 79.9 | 12.0 | 2.1 | 6.0 |
| UNI-PUMP LC-65HSA | 3150 | 1730 | 163 | 2610 | 64.5 | 30.8 | 2.0 | 2.7 |
| UNI-PUMP ML-69CA | 3050 | 1680 | 158 | 2530 | 64.2 | 29.1 | 1.3 | 5.4 |
| UNI-CAST LC-65PA | 3100 | 1700 | 165 | 2640 | 63.1 | 30.0 | 1.3 | 5.6 |
| UNI-CAST ML-69CA | 3100 | 1700 | 158 | 2530 | 61.9 | 31.3 | 1.2 | 5.6 |
| UNI-PUMP 60A | 3100 | 1700 | 153 | 2450 | 59.0 | 36.5 | 2.0 | 2.5 |
| UNI-PUMP LC-50HZA | 3000 | 1650 | 161 | 2580 | 48.5 | 35.6 | 2.6 | 8.9 ZrO ₂ |
| UNI-CAST LC-60SCA | 2900 | 1590 | 163 | 2610 | 24.0 | 12.3 | 1.5 | 61.1 SiC |

| UPPER SIDEWALL | MAXIMUM TEMP. | | MATERIAL REQ'D | | CHEMICAL ANALYSIS % | | | |
|--|---------------|------|---------------------|-------------------|------------------------------------|------------------------|------------|-----------------------------------|
| | °F | °C | Lbs/ft ³ | Kg/m ³ | Al ₂ O ₃ | SiO ₂ | CaO | Other |
| UNI-CAST LC-80HSA | 3200 | 1760 | 183 | 2930 | 79.9 | 12.0 | 2.1 | 6.0 |
| UNI-PUMP ML-69CA | 3050 | 1680 | 158 | 2530 | 64.2 | 29.1 | 1.3 | 5.4 |
| UNI-CAST LC-65PA | 3100 | 1700 | 165 | 2640 | 63.1 | 30.0 | 1.3 | 5.6 |
| UNI-CAST ML-69CA | 3100 | 1700 | 158 | 2530 | 61.9 | 31.3 | 1.2 | 5.6 |
| UNI-PUMP 60 | 3100 | 1700 | 153 | 2450 | 59.0 | 36.5 | 2.0 | 2.5 |
| UNI-CAST 3000 | 3000 | 1650 | 130 | 2080 | 51.6 | 40.9 | 4.6 | 2.9 |
| UNI-PUMP 45 | 2950 | 1620 | 148 | 2370 | 50.4 | 44.3 | 3.0 | 2.3 |
| UNI-CAST 2600A | 2600 | 1430 | 133 | 2130 | 48.4 | 37.8 | 9.6 | 4.2 |
| JAMBS, LINTELS, RAMPS AND SILLS | | | | | Al₂O₃ | SiO₂ | CaO | Other |
| UNI-PUMP LC-80HSA | 3200 | 1760 | 183 | 2930 | 82.5 | 11.8 | 2.1 | 3.6 |
| UNI-PUMP LC-65HSA | 3150 | 1730 | 163 | 2610 | 64.5 | 30.8 | 2.0 | 2.7 |
| UNI-PUMP ML-69CA | 3050 | 1680 | 158 | 2530 | 64.2 | 29.1 | 1.3 | 5.4 |
| UNI-CAST LC-65PA | 3100 | 1700 | 165 | 2640 | 63.1 | 30.0 | 1.3 | 5.6 |
| UNI-CAST LC-60SCA | 2900 | 1590 | 163 | 2610 | 24.0 | 12.3 | 1.5 | 61.1 sic |
| BURNER BLOCKS, TAP HOLE BLOCKS | | | | | Al₂O₃ | SiO₂ | CaO | Other |
| UNI-CAST LC-94 | 3300 | 1820 | 195 | 3120 | 93.3 | 4.7 | 1.5 | 0.5 |
| UNI-CAST LC-65PA | 3100 | 1700 | 165 | 2640 | 63.1 | 30.0 | 1.3 | 5.6 |
| UNI-CAST ML-69CA | 3100 | 1700 | 158 | 2530 | 61.9 | 31.3 | 1.2 | 5.6 |
| UNI-CAST 2600A | 2600 | 1430 | 133 | 2130 | 48.4 | 37.8 | 9.6 | 4.2 |
| UNI-CAST LC-60SCA | 2900 | 1590 | 163 | 2610 | 24.0 | 12.3 | 1.5 | 61.1 sic |
| UNI-RAM 85ESS A | 3200 | 1760 | 180 | 2880 | 74.9 | 16.2 | - | 3.6 P ₂ O ₅ |
| UNI-RAM BLU J-A | 3100 | 1700 | 170 | 2720 | 68.5 | 25.6 | - | 3.7 P ₂ O ₅ |
| HEARTH / SUBHEARTH | | | | | Al₂O₃ | SiO₂ | CaO | Other |
| UNI-PUMP LC-65HSA | 3150 | 1730 | 163 | 2610 | 64.5 | 30.8 | 2.0 | 2.7 |
| UNI-PUMP ML-69CA | 3050 | 1680 | 158 | 2530 | 64.2 | 29.1 | 1.3 | 5.4 |
| UNI-CAST LC-65PA | 3100 | 1700 | 165 | 2640 | 63.1 | 30.0 | 1.3 | 5.6 |
| UNI-CAST ML-69CA | 3100 | 1700 | 158 | 2530 | 61.9 | 31.3 | 1.2 | 5.6 |
| UNI-PUMP 45 | 2950 | 1620 | 148 | 2370 | 50.4 | 44.3 | 3.0 | 2.3 |
| PUMP-CAST 50C | 2900 | 1590 | 143 | 2290 | 50.0 | 44.8 | 2.4 | 2.8 |
| UNI-CAST 2400C | 2450 | 1340 | 128 | 2050 | 42.7 | 43.7 | 9.6 | 4.0 |
| ROOF / FLUE | | | | | Al₂O₃ | SiO₂ | CaO | Other |
| UNI-PUMP ML-69CA | 3050 | 1680 | 158 | 2530 | 64.2 | 29.1 | 1.3 | 5.4 |
| PUMP-CAST 60 | 3050 | 1680 | 155 | 2480 | 54.6 | 41.4 | 1.6 | 2.4 |
| UNI-PUMP 45 | 2950 | 1620 | 148 | 2370 | 50.4 | 44.3 | 3.0 | 2.3 |
| PUMP-CAST 50C | 2900 | 1590 | 143 | 2290 | 50.0 | 44.8 | 2.4 | 2.8 |
| UNI-CAST 2600A | 2600 | 1430 | 133 | 2130 | 48.4 | 37.8 | 9.6 | 4.2 |
| UNI-CAST 2400CA | 2450 | 1340 | 128 | 2050 | 41.3 | 42.3 | 9.3 | 7.1 |

ALUMINUM REFRACTORIES

STACK MELTER



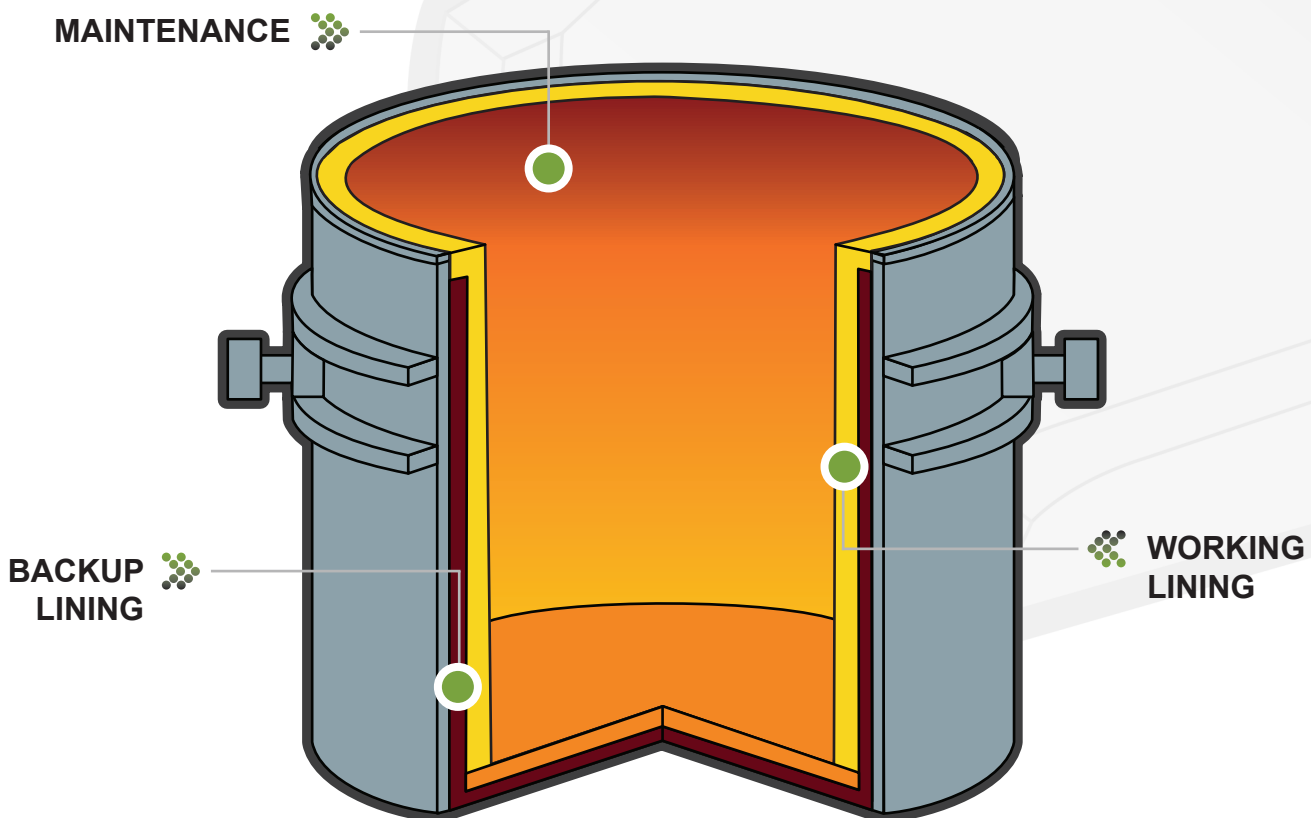
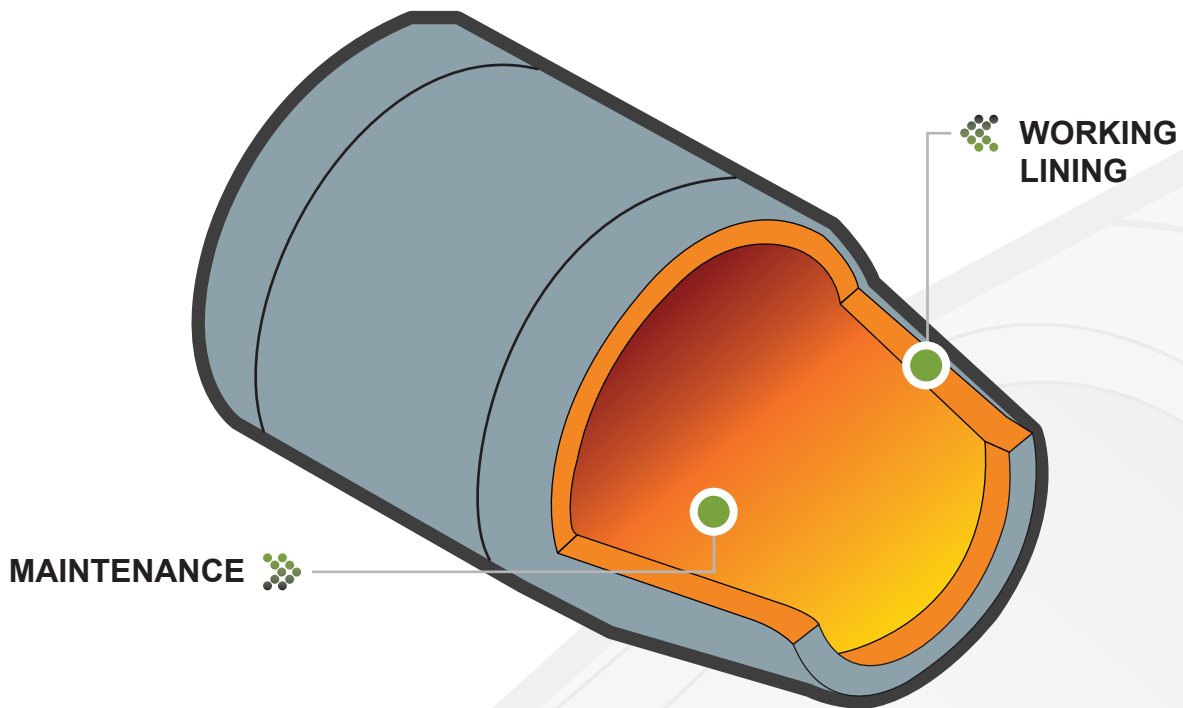
STACK MELTER

STACK MELTER

| STACK | MAXIMUM TEMP. | | MATERIAL REQ'D | | CHEMICAL ANALYSIS % | | | |
|--|---------------|------|---------------------|-------------------|------------------------------------|------------------------|------------|----------------------|
| | °F | °C | Lbs/ft ³ | Kg/m ³ | Al ₂ O ₃ | SiO ₂ | CaO | Other |
| UNI-PUMP LC-80HSA | 3200 | 1760 | 183 | 2930 | 82.5 | 11.8 | 2.1 | 3.6 |
| UNI-CAST ML-77A | 3300 | 1820 | 158 | 2530 | 67.5 | 25.0 | 1.4 | 6.1 |
| UNI-PUMP ML-69CA | 3050 | 1680 | 158 | 2530 | 64.2 | 29.1 | 1.3 | 5.4 |
| UNI-PUMP RF-60Z | 3100 | 1700 | 152 | 2435 | 56.0 | 35.6 | 2.6 | 3.3 ZrO ₂ |
| UPPER SIDEWALL | | | | | Al₂O₃ | SiO₂ | CaO | Other |
| UNI-PUMP LC-65PA | 3100 | 1700 | 165 | 2640 | 65.5 | 30.6 | 1.0 | 2.9 |
| UNI-PUMP ML-69CA | 3050 | 1680 | 158 | 2530 | 64.2 | 29.1 | 1.3 | 5.4 |
| UNI-PUMP 45 | 2950 | 1620 | 148 | 2370 | 50.4 | 44.3 | 3.0 | 2.3 |
| LOWER SIDEWALL, JAMBS, LINTELS, RAMPS & SILLS | | | | | Al₂O₃ | SiO₂ | CaO | Other |
| UNI-PUMP LC-80HSA | 3200 | 1760 | 183 | 2930 | 82.5 | 11.8 | 2.1 | 3.6 |
| UNI-CAST ML-77A | 3300 | 1820 | 158 | 2530 | 67.5 | 25.0 | 1.4 | 6.1 |
| UNI-PUMP ML-69CA | 3050 | 1680 | 158 | 2530 | 64.2 | 29.1 | 1.3 | 5.4 |
| BURNER BLOCKS, TAP HOLE BLOCKS | | | | | Al₂O₃ | SiO₂ | CaO | Other |
| UNI-CAST ML-69CA | 3100 | 1700 | 158 | 2530 | 61.9 | 31.3 | 1.2 | 5.6 |
| PUMP-CAST 60A | 3050 | 1680 | 155 | 2485 | 58.6 | 37.2 | 1.5 | 2.7 |
| HEARTH / SUBHEARTH | | | | | Al₂O₃ | SiO₂ | CaO | Other |
| UNI-PUMP LC-80HSA | 3200 | 1760 | 183 | 2930 | 82.5 | 11.8 | 2.1 | 3.6 |
| UNI-CAST ML-77A | 3300 | 1820 | 158 | 2530 | 67.5 | 25.0 | 1.4 | 6.1 |
| UNI-PUMP ML-69CA | 3050 | 1680 | 158 | 2530 | 64.2 | 29.1 | 1.3 | 5.4 |
| UNI-CAST LW-80G* | 2500 | 1370 | 85 | 1360 | 44.1 | 39.8 | 11.6 | 4.5 |
| UNI-CAST 2400CA* | 2450 | 1340 | 128 | 2050 | 41.3 | 42.3 | 9.3 | 7.1 |
| *Subhearth only | | | | | | | | |
| ROOF | | | | | Al₂O₃ | SiO₂ | CaO | Other |
| UNI-CAST ML-69CA | 3100 | 1700 | 158 | 2530 | 61.9 | 31.3 | 1.2 | 5.6 |
| UNI-PUMP 45 | 2950 | 1620 | 148 | 2370 | 50.4 | 44.3 | 3.0 | 2.3 |

ALUMINUM REFRACTORIES

ROTARY, DIE CASTING, TRANSFER & MAINTENANCE



ROTARY

| WORKING LINING | MAXIMUM TEMP. | | MATERIAL REQ'D | | CHEMICAL ANALYSIS % | | | |
|----------------------|---------------|------|---------------------|-------------------|--------------------------------|------------------|-----|-----------------------------------|
| | °F | °C | Lbs/ft ³ | Kg/m ³ | Al ₂ O ₃ | SiO ₂ | CaO | Other |
| UNI-PUMP LC-80HSA | 3200 | 1760 | 183 | 2930 | 82.5 | 11.8 | 2.1 | 3.6 |
| UNI-PUMP LC-85A | 3300 | 1820 | 178 | 2850 | 81.9 | 9.8 | 1.4 | 6.9 |
| UNI-PUMP LC-65PA | 3100 | 1700 | 165 | 2640 | 65.5 | 30.6 | 1.0 | 2.9 |
| UNI-PUMP ML-69CA | 3050 | 1680 | 158 | 2530 | 64.2 | 29.1 | 1.3 | 5.4 |
| MAINTENANCE PRODUCTS | | | | | Al ₂ O ₃ | SiO ₂ | CaO | Other |
| UNI-GUN 70A | 3100 | 1700 | 153 | 2450 | 69.8 | 22.4 | 3.8 | 4.0 |
| UNI-GUN 65A | 3100 | 1700 | 163 | 2610 | 63.2 | 27.2 | 3.7 | 5.9 |
| UNI-GUN RF-65RGA | 3100 | 1700 | 143 | 2290 | 63.1 | 28.1 | 2.8 | 6.0 |
| UNI-SHOT 65A | 3150 | 1730 | 163 | 2610 | 61.0 | 31.6 | 2.0 | 5.4 |
| UNI-RAM 85ESS A | 3200 | 1760 | 180 | 2880 | 74.9 | 16.2 | - | 3.6 P ₂ O ₅ |
| UNI-RAM F-A | 3000 | 1650 | 157 | 2520 | 50.1 | 41.9 | - | 3.4 P ₂ O ₅ |

LOW PRESSURE DIE CASTING

| WORKING LINING | MAXIMUM TEMP. | | MATERIAL REQ'D | | CHEMICAL ANALYSIS % | | | |
|------------------|---------------|------|---------------------|-------------------|--------------------------------|------------------|------|-------|
| | °F | °C | Lbs/ft ³ | Kg/m ³ | Al ₂ O ₃ | SiO ₂ | CaO | Other |
| UNI-CAST ML-77A | 3300 | 1820 | 158 | 2530 | 67.5 | 25.0 | 1.4 | 6.1 |
| UNI-PUMP ML-69CA | 3050 | 1680 | 158 | 2530 | 64.2 | 29.1 | 1.3 | 5.4 |
| UNI-CAST LC-65PA | 3100 | 1700 | 165 | 2640 | 63.1 | 30.0 | 1.3 | 5.6 |
| SAFETY LINING | | | | | Al ₂ O ₃ | SiO ₂ | CaO | Other |
| UNI-CAST 2400C | 2450 | 1340 | 128 | 2050 | 42.7 | 43.7 | 9.6 | 4.0 |
| UNI-CAST LW-80G | 2500 | 1370 | 85 | 1360 | 44.1 | 39.8 | 11.6 | 4.5 |
| UNI-CAST LW-60G | 2300 | 1260 | 62 | 995 | 31.2 | 46.2 | 14.2 | 8.4 |

TRANSFER & MAINTENANCE

| CASTABLES | MAXIMUM TEMP. | | MATERIAL REQ'D | | CHEMICAL ANALYSIS % | | | |
|---|---------------|------|---------------------|-------------------|------------------------------------|------------------------|-----------------------------------|--------------|
| | °F | °C | Lbs/ft ³ | Kg/m ³ | Al ₂ O ₃ | SiO ₂ | CaO | Other |
| UNI-CAST LC-80HSA | 3200 | 1760 | 183 | 2930 | 79.9 | 12.0 | 2.1 | 6.0 |
| UNI-CAST ML-77A | 3300 | 1820 | 158 | 2530 | 67.5 | 25.0 | 1.4 | 6.1 |
| UNI-CAST LC-65PA | 3100 | 1700 | 165 | 2640 | 63.1 | 30.0 | 1.3 | 5.6 |
| UNI-CAST ML-69CA | 3100 | 1700 | 158 | 2530 | 61.9 | 31.3 | 1.2 | 5.6 |
| UNI-CAST 28ALW-HS | 2800 | 1540 | 115 | 1840 | 46.2 | 46.4 | 4.5 | 2.9 |
| UNI-CAST 2400CA | 2450 | 1340 | 128 | 2050 | 41.3 | 42.3 | 9.3 | 7.1 |
| UNI-CAST 25-75A | 2500 | 1370 | 75 | 1200 | 37.8 | 44.7 | 7.7 | 9.8 |
| UNI-CAST FS-6A | 2300 | 1260 | 135 | 2160 | 24.7 | 68.2 | 1.4 | 5.7 |
| UNI-CAST FSA | 2000 | 1090 | 120 | 1920 | 3.5 | 91.7 | 1.5 | 3.3 |
| UNI-CAST LW-80G | 2500 | 1370 | 85 | 1360 | 44.1 | 39.8 | 11.6 | 4.5 |
| UNI-CAST LW-60G | 2300 | 1260 | 62 | 995 | 31.2 | 46.2 | 14.2 | 8.4 |
| UNI-CAST LW-35G | 2000 | 1090 | 37 | 595 | 29.6 | 49.5 | 13.8 | 7.1 |
| UNI-CAST LC-80SCA | 3100 | 1700 | 165 | 2640 | 12.7 | 5.9 | 1.4 | 76.3 sic |
| UNI-CAST LC-60SCA | 2900 | 1590 | 163 | 2610 | 24.0 | 12.3 | 1.5 | 61.1 sic |
| GUNNING MIXES | | | | | Al₂O₃ | SiO₂ | CaO | Other |
| UNI-GUN 80HGA | 3200 | 1760 | 148 | 2370 | 79.6 | 14.9 | 1.6 | 3.9 |
| UNI-GUN 70HGA | 3150 | 1730 | 143 | 2290 | 73.0 | 18.3 | 1.6 | 7.1 |
| UNI-GUN 65A | 3100 | 1700 | 163 | 2610 | 63.2 | 27.2 | 3.7 | 5.9 |
| UNI-GUN RF-65RGA | 3100 | 1700 | 143 | 2290 | 63.1 | 28.1 | 2.8 | 6.0 |
| PLASTICS, SOFT PLASTICS & PLASTERS | | | | | Al₂O₃ | SiO₂ | P₂O₅ | Other |
| UNI-RAM 85ESS A | 3200 | 1760 | 180 | 2880 | 74.9 | 16.2 | 3.6 | 5.3 |
| UNI-RAM BLU J-A | 3100 | 1700 | 170 | 2720 | 68.5 | 25.6 | 3.7 | 2.2 |
| UNI-PLAS 85ESSA | 3200 | 1760 | 168 | 2690 | 76.5 | 16.1 | 3.7 | 3.7 |
| UNI-PLAS BLU J-A | 3100 | 1700 | 170 | 2720 | 67.2 | 25.9 | 4.1 | 2.8 |
| UNI-RAM 85C PLASTER | 3200 | 1760 | 180 | 2880 | 73.9 | 19.2 | 3.7 | 3.2 |
| UNI-RAM BLU FINE PLASTER | 3100 | 1700 | 160 | 2565 | 61.5 | 32.5 | 3.6 | 2.4 |

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Customers need refractory to perform effectively throughout their life cycle demands. We offer more than a product recommendation -- URC provides the total package combining excellent service with a specific solution designed to meet or exceed your expectations. Our refractory products and our people represent Performance Designed Solutions grounded in quality, anchored by technology and supported by customer service that is second to none.

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certification - we go even
further. It's not just our
standard, quality is our
commitment.