INSULATING FIREBRICK

IFB-23 to IFB-32 · Lightweight Backup Lining · 1260°C – 1760°C · 70% Lower Conductivity

PRODUCT OVERVIEW

Vuulcan IFB Series are lightweight alumina-silicate insulating firebricks designed for backup lining and thermal barrier applications. High porosity (65–75%) provides low thermal conductivity — cutting furnace fuel costs 30–40% when properly layered. NOT for direct slag contact or load-bearing zones. Factory-direct from Zibo refractory cluster with 60+ years heritage.

KEY FEATURES

- ✓ 70% lower thermal conductivity than dense brick
- ✓ Density 0.6–1.2 g/cm³ — five grades for different zones
- ✓ Temperature range 1260–1760°C (backup layer use)
- ✓ ±1.5mm dimensional tolerance — minimizes heat leakage
- ✓ ASTM C155 compliant — batch-level COA
- ✓ 8–14 month fuel savings payback period

TECHNICAL SPECIFICATIONS (5 GRADES)

GRADE	BULK DENSITY	POROSITY	CCS	MAX TEMP	Λ (W/M·K)*	TYPICAL APPLICATION
IFB-23	0.6 g/cm³	75%	≥ 2.5 MPa	1260°C	0.26	Safety layer, low-temp backup
IFB-26	0.75 g/cm³	72%	≥ 3.5 MPa	1430°C	0.32	Heat treatment furnace backup
IFB-28	0.9 g/cm³	70%	≥ 5.0 MPa	1540°C	0.40	Forging furnace, kiln backup
IFB-30	1.05 g/cm³	68%	≥ 6.5 MPa	1650°C	0.50	High-temp kiln insulation
IFB-32	1.20 g/cm³	65%	≥ 8.0 MPa	1760°C	0.65	Critical hot zone backup

* λ = Thermal Conductivity at mean temperature. Lower = better insulation. Compare: dense firebrick λ ≈ 1.2–1.8 W/m·K

⚠ **CRITICAL:** IFB is NOT load-bearing. Do not use in arches, suspended roofs, hearth under heavy load, or anywhere subject to direct mechanical stress or slag contact. Dense brick required for hot face and structural zones.

PHYSICAL & THERMAL PROPERTIES

GRADE	REHEAT LINEAR CHANGE (1400°C, 2H)	PERMANENT LINEAR CHANGE (MAX TEMP, 24H)	THERMAL EXPANSION (1000°C)	MODULUS OF RUPTURE
IFB-23	±0.5%	-1.0%	0.6%	≥ 1.2 MPa
IFB-26	±0.5%	-1.0%	0.7%	≥ 1.5 MPa
IFB-28	±0.5%	-1.2%	0.8%	≥ 2.0 MPa
IFB-30	±0.5%	-1.5%	0.9%	≥ 2.5 MPa
IFB-32	±0.5%	-1.5%	1.0%	≥ 3.0 MPa

3-LAYER LINING ARCHITECTURE (TYPICAL DESIGN)

LAYER 1: HOT FACE
1200–1600°C
Dense Firebrick or Castable
Wear resistance, load-bearing

LAYER 2: BACKUP (IFB)
600–1000°C
IFB-26 or IFB-28
Primary thermal barrier

LAYER 3: SAFETY
<300°C
IFB-23 or Fiber Board
Shell protection

Layered lining saves 30–40% fuel vs. single-layer dense brick. IFB backup layer is where energy savings happen.

STANDARD DIMENSIONS & PACKAGING

SIZE DESIGNATION	LENGTH (MM)	WIDTH (MM)	THICKNESS (MM)	PIECES/PALLET	WEIGHT/PIECE (KG)*
Standard 9"	230	114	65	360	1.0–2.0
Standard 9" Thick	230	114	76	300	1.2–2.4
Split 9"	230	114	32	720	0.5–1.0

* Weight varies by grade (IFB-23 lightest, IFB-32 heaviest). Dimensional tolerance: ±1.5mm. Custom sizes available for large projects (MOQ 10 tons).

QUALITY CONTROL & TESTING (PER BATCH)

1	Bulk density verification (±0.05 g/cm³)	ASTM C20	**2**	Porosity testing (mercury intrusion)	ASTM C830
3	Cold crushing strength (CCS)	ASTM C133	**4**	Thermal conductivity (hot wire method)	ASTM C182
5	Dimensional inspection (±1.5mm)	C155 §7	**6**	Reheat linear change testing	ASTM C113

APPLICABLE STANDARDS & CERTIFICATIONS

PRIMARY STANDARD
ASTM C155

CHINESE NATIONAL
GB/T 3994

INTERNATIONAL
ISO 2245

QUALITY SYSTEM
ISO 9001:2015

TEST METHODS
ASTM C20, C133, C182

DOCUMENTATION
Full COA per batch

ISO 9001 | ASTM C155 | GB/T 3994 | ISO 2245 | COA INCLUDED

ORDERING INFORMATION

Model nomenclature: `VRF – IFB–26 – ST – 230`

VRF = Vuulcan Refractory · **IFB-XX** = Grade (23/26/28/30/32) · **ST/SP** = Standard / Split thickness · **Size** = 230 (9") / Custom

Packaging: Wooden pallets, shrink-wrapped · 300–720 pieces/pallet depending on size · **Lead Time:** 20–30 days production + shipping · **MOQ:** 1 pallet per grade (mixed container acceptable) · **Pricing:** FOB Qingdao or CIF destination · **Contact:** inquiry@vuulcan.com · WhatsApp: +86 130 5488 5665