HFFR-04XZ-K SC BUILDING WIRE, 1100 V AC

PRODUCT SPECIFICATION

INDOCABLES HFFR-04XZ-K SC BUILDING WIRE, 1100 V AC

FIG. 1 — SHEATH PRINT AND BUNCHED CONDUCTOR

Images not to scale. Follow table for dimensions

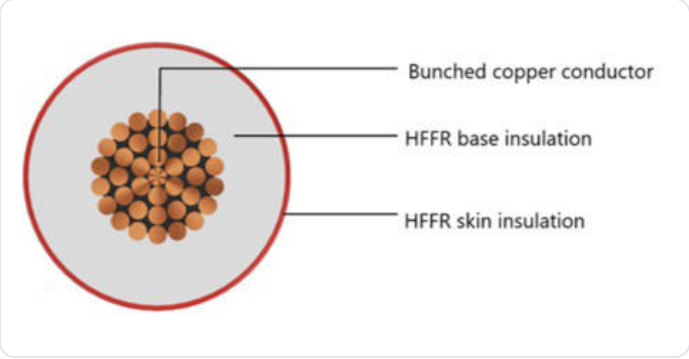

FIG. 2 — CONSTRUCTION, CROSS SECTION

APPLICATION

INDOCABLES HFFR-04XZ-K SC, Single core cable insulated with cross linked halogen free flame retardant compound having low smoke emission and corrosive gases when exposed to fire condition. This cable is designed to use in conduit and for fixed protected installation. This is also suitable to use high rise buildings, hospitals, and offices where Smoke emission and toxic fume create a potential risk to life as well as the lifesaving equipment.

CHARACTERISTICS

Voltage Rating	1100 V
Operation Temperature	Fixed: −15 °C to + 90 °C
Test Voltage	3000 V AC at room temperature
Bending Radius	Fixed 4 × Overall Diameter · Occasional 6 × Overall Diameter

CONSTRUCTION

- Annealed bare or tinned bunched copper conductor as per IS 8130, class 5
- Insulated with cross linked halogen free flame retardant compound type HFI-XL 90 to IS 17048

Core Identification	Red / Black / Blue / Yellow / White / Grey / Green-Yellow

STANDARD FOLLOWS

IS 8130 · IS 17048 · IEC 60332-1-2

COMPLIANCE

Conductor resistance	IS 8130
Insulation resistance	IS 17048:2018
Oxygen index — Min. 31 %	IS 10810 (Part 58) / ASTM D2863
Smoke density — Min. 70 %	IS 10810 (Part 63) / ASTM D2843
Assessment of halogens	IS 10810 (Part 59) / IS 17048

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WEIGHT & DIMENSION DATA

PRODUCT CODE	NOMINAL CROSS-SECTIONAL AREA MM²	CLASS OF CONDUCTOR	INSULATION THICKNESS MM	OVERALL DIAMETER (APPROX.) MM	WEIGHT (APPROX.)
IC-HW-01-00050-CU-HFI-H07XZK-1100-IS17048-ZHFR	0.5	5	0.6	2.11	9
IC-HW-01-00075-CU-HFI-H07XZK-1100-IS17048-ZHFR	0.75	5	0.6	2.32	11
IC-HW-01-00100-CU-HFI-H07XZR-1100-IS17048-ZHFR	1	2	0.7	2.67	15
IC-HW-01-00100-CU-HFI-H07XZK-1100-IS17048-ZHFR	1	5	0.6	2.49	14
IC-HW-01-00150-CU-HFI-H07XZR-1100-IS17048-ZHFR	1.5	2	0.7	3	21
IC-HW-01-00150-CU-HFI-H07XZK-1100-IS17048-ZHFR	1.5	5	0.6	2.76	19
IC-HW-01-00250-CU-HFI-H07XZR-1100-IS17048-ZHFR	2.5	2	0.8	3.62	32
IC-HW-01-00250-CU-HFI-H07XZK-1100-IS17048-ZHFR	2.5	5	0.7	3.42	31
IC-HW-01-00400-CU-HFI-H07XZK-1100-IS17048-ZHFR	4	5	0.8	4.07	45
IC-HW-01-00600-CU-HFI-H07XZK-1100-IS17048-ZHFR	6	5	0.8	4.62	64
IC-HW-01-01000-CU-HFI-H07XZK-1100-IS17048-ZHFR	10	5	1	5.92	106
IC-HW-01-01600-CU-HFI-H07XZK-1100-IS17048-ZHFR	16	5	1	6.97	162

Product codes derived to the ITEM MASTER grammar — no HFFR single-core item is registered yet. See flagged notes.

ELECTRICAL CHARACTERISTICS

Current carrying capacity and maximum DC resistance.

NOMINAL CROSS-SECTIONAL AREA MM²	CLASS OF CONDUCTOR	REFERENCE METHOD B (enclosed in conduit on a wall or in trunking etc.) Amp.	REFERENCE METHOD C (clipped direct) Amp.	MAXIMUM DC CONDUCTOR RESISTANCE AT 20 °C Ω/KM
0.5	5	5	5	39
0.75	5	9	10	26
1	2	15.5	17	18.1
1	5	15	16	19.5
1.5	2	21	23	12.1
1.5	5	20	22	13.3
2.5	2	28	31	7.41
2.5	5	27	29	7.98
4	5	36	40	4.95
6	5	47	51	3.3
10	5	65	70	1.91
16	5	86	94	1.21

Air Ambient temperature: 40 °C, Conductor operating temperature: 90 °C. The above table is in accordance with BS 7671 (Table 4E1A).

DE-RATING FACTOR

De-rating factor for various ambient temperature.

AIR TEMPERATURE	35 °C	40 °C	45 °C	50 °C	55 °C	60 °C	65 °C	70 °C	75 °C	80 °C	85 °C
De-Rating Factor	1.04	1.0	0.95	0.89	0.84	0.82	0.77	0.63	0.55	0.45	0.32

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OUTSTANDING FEATURES

- LOW SMOKE
- HALOGEN FREE
- FLAME RETARDANT
- HIGHLY FLEXIBLE
- HEAT RESISTANT

CERTIFICATIONS & APPROVALS

ISO 9001
Cert. 99 100 22646 (TÜV SÜD)

ISI
Bureau of Indian Standards · CM/L to be confirmed

RoHS
Compliant

REACH
Compliant

Make in India
Manufactured in India

INTERNAL FLAGGED FOR THE CODE STEWARD

1. **No HFFR single-core item exists in the register.** The ITEM MASTER carries the HW line only as `CU-PVC-H07VU / H07VR / H07VK-0450-IS694`. All twelve codes on this sheet are derived to the register's grammar: `IC-HW-01—<SIZE>—CU-HFI—<DESIG>—1100-IS17048-ZHFR`. Line HW, cores 01, every size, conductor CU, insulation HFI, voltage 1100 and option ZHFR are registered values; the items themselves are not.
2. **Designations `H07XZK` and `H07XZR` are not in lst_DESIG.** `H07XZK` is the cross-linked designation already proposed on sheet BW-03; `H07XZR` is added here for the class 2 rows at 1, 1.5 and 2.5 mm². K = flexible class 5, R = stranded class 2, X = cross-linked, following the PVC pattern. Please add both.
3. **Insulation code `HFI` does not distinguish this compound.** lst_INS reads "Halogen free flame retardant — HFFR / LSZH" with no cross-linked variant and no temperature rating, so HFI-XL 90 (this sheet), HFI-XL 70 (BW-02, BW-03) and HFI-TP 70 all code identically. A distinct code for the cross-linked 90 °C compound is needed.
4. **Standard `IS17048` is not in lst_STD.** The nearest register entry is IS 17505 Part 1 (thermosetting insulated, low smoke). Add IS 17048 or confirm the substitute.
5. **Old codes cited IS 694.** Every source code ended `…ZHB5FRLSIS694` / `…ZHB2FRLSIS694` while the sheet text specifies IS 17048 for the compound. New codes follow the sheet text. Please confirm.
6. **Voltage grade.** The sheet states 1100 V, so codes carry `1100`. Every registered HW item is `0450` (450/750 V). Reproduced as written — not corrected.
7. **Conductor class.** Construction reads "bunched copper conductor as per IS 8130, class 5", but both tables carry class 2 rows at 1, 1.5 and 2.5 mm². Reproduced as written; please confirm the construction line should also cover class 2.
8. **Weight column carries no unit** in the source table — the header reads "Weight (Approx.)" only. Values reproduced as written; no unit assumed. Kg/km is the unit used on the other building-wire sheets.
9. **Smoke density "Min. 70 %".** IS 10810 (Part 63) / ASTM D2843 smoke density is normally quoted as a maximum limit, not a minimum. Reproduced as written.
10. **Bending radius.** Fixed 4 × OD and Occasional 6 × OD, as written. Sheet BW-06 states the opposite pairing (fixed 6 ×, occasional 4 ×). Reproduced as supplied — please reconcile across the family.
11. **De-rating steps.** The 55 °C → 60 °C step (0.84 → 0.82) is much smaller than its neighbours, and the source cites BS 7671 Table 4E1A for the current table. Values reproduced as written.
12. **Third-party marks removed.** The source carried NABL in the accreditation block and FQC and CE in the approval block. All three deleted. ISI retained and ISO 9001 badge added — the pair now sits in the Certifications & Approvals band above this list, not in the running page header.
13. **Images.** Fig. 1 sheath print reads INDOCABLES, so the original render is retained. Fig. 2 cross section (bunched copper conductor / HFFR base insulation / HFFR skin insulation) kept as-is.
14. **Halogen-free icon is a nearest-match stand-in** (lead-free artwork). No halogen-free icon exists in the brand set — please commission one.
15. **Document properties.** The source .docx author, company and last-modified-by fields do not carry into this sheet.
16. **Make in India mark is low resolution.** The only file in the brand set is 80 × 41 px, which upscales soft at print size. A vector or high-resolution version is needed.

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