HFFR-01Z-K / 03XZ-K SC BUILDING WIRE, 1100 V AC

PRODUCT SPECIFICATION

INDOCABLES HFFR-01Z-K / 03XZ-K SC BUILDING WIRE, 1100 V AC

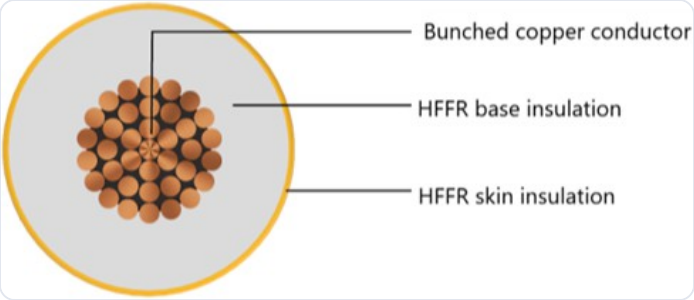

FIG. 1 — CONSTRUCTION, CROSS SECTION

Images not to scale. Follow table for dimensions

FIG. 2 — SHEATH PRINT AND BUNCHED CONDUCTOR

APPLICATION

INDOCABLES HFFR-01Z-K/03XZ-K SC, insulated with cross linked halogen free flame-retardant compound thermoplastic or cross-linked thermoset 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 + 70 °C
Bending Radius	Fixed 4 × Overall Diameter · Occasional 6 × Overall Diameter
Test Voltage	3000 V AC at room temperature
Core Identification	Red / Black / Blue / Yellow / White / Grey / Green-Yellow

CONSTRUCTION

- Annealed bare or tinned bunched copper conductor as per IS 8130, class 5
- Insulated with halogen free flame-retardant compound type HFI-TP 70 or cross-linked halogen free flame-retardant compound type HFI-XL 70 as per IS 17048

LOW SMOKE HALOGEN FREE

FLAME RETARDANT

HIGHLY FLEXIBLE

HEAT RESISTANT

STANDARD FOLLOWS

IS 8130 · IS 17048 · IEC 60332-1-2

NOTES

Cable with HFI XL-70 insulation is available on demand.

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.) KG/KM
IC-HW-01-00050-CU-HFI-H07ZK-1100-IS17048-ZHFR	0.5	5	0.6	2.11	9
IC-HW-01-00075-CU-HFI-H07ZK-1100-IS17048-ZHFR	0.75	5	0.6	2.32	11
IC-HW-01-00100-CU-HFI-H07ZR-1100-IS17048-ZHFR	1	2	0.7	2.67	15
IC-HW-01-00100-CU-HFI-H07ZK-1100-IS17048-ZHFR	1	5	0.6	2.49	14
IC-HW-01-00150-CU-HFI-H07ZR-1100-IS17048-ZHFR	1.5	2	0.7	3.00	21
IC-HW-01-00150-CU-HFI-H07ZK-1100-IS17048-ZHFR	1.5	5	0.6	2.76	19
IC-HW-01-00250-CU-HFI-H07ZR-1100-IS17048-ZHFR	2.5	2	0.8	3.62	32
IC-HW-01-00250-CU-HFI-H07ZK-1100-IS17048-ZHFR	2.5	5	0.7	3.42	31
IC-HW-01-00400-CU-HFI-H07ZK-1100-IS17048-ZHFR	4	5	0.8	4.07	45
IC-HW-01-00600-CU-HFI-H07ZK-1100-IS17048-ZHFR	6	5	0.8	4.62	64
IC-HW-01-01000-CU-HFI-H07ZK-1100-IS17048-ZHFR	10	5	1	5.92	106
IC-HW-01-01600-CU-HFI-H07ZK-1100-IS17048-ZHFR	16	5	1	6.97	162

ELECTRICAL CHARACTERISTICS

Current carrying capacity and maximum DC conductor 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	4	4.6	39
0.75	5	7	8	26
1	2	11.7	13.5	18.1
1	5	11.2	12.8	19.5
1.5	2	15.2	17.4	12.1
1.5	5	14.5	16.5	13.3
2.5	2	20.9	23.5	7.41
2.5	5	19.8	22.3	7.98
4	5	26.6	30.6	4.95
6	5	33.9	38.8	3.3
10	5	47.1	53.7	1.91
16	5	62.8	71.9	1.21

The ambient temperature is 40 °C. Conductor operating temperature 70 °C. The above table is in accordance with the BS 7671 (Table 4D1A).

DE-RATING FACTOR

De-rating factor for various ambient temperature.

AMBIENT TEMPERATURE	35 °C	40 °C	45 °C	50 °C	55 °C	60 °C	65 °C
De-Rating Factor	1.08	1	0.91	0.82	0.7	0.57	0.4

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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

ORDERING

Order by product code and size. State conductor class (2 stranded or 5 bunched flexible), conductor finish (bare or tinned copper) and core colour, and whether HFI-TP 70 thermoplastic or HFI-XL 70 cross-linked insulation is required.

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`. Codes on this sheet are derived to the register's grammar: `IC-HW-01–<SIZE>–CU-HFI–<DESIG>–1100-IS17048-ZHFR`. Line HW, insulation HFI and option ZHFR are registered values; the items themselves are not.
2. **Designations `H07ZK` and `H07ZR` are not in lst_DESIG.** Derived from the PVC pattern — K for flexible class 5, R for stranded class 2 — for the thermoplastic HFFR single core (source designation 01Z-K). The cross-linked variant (03XZ-K, HFI-XL 70) needs its own designation, proposed `H07XZK`, before it can be coded. Please add all three.
3. **Standard `IS17048` is not in lst_STD.** The source sheet specifies IS 17048 for the insulation compound; the register's nearest entry is IS 17505 Part 1. Add IS 17048 or confirm the substitute.
4. **Old codes did not distinguish conductor class.** The source table used one code per size (e.g. `HWC1C001ZHFRLSIS694`) for both the class 2 and class 5 rows at 1, 1.5 and 2.5 mm². The new codes split them by designation, so those three sizes now carry two distinct codes each.
5. **Old codes cited IS 694.** Every source code ended `…ZHFRLSIS694` while the sheet text specifies IS 17048 for the compound. New codes follow the sheet text. Please confirm.
6. **Voltage grade.** The source sheet states 1100 V, so codes carry `1100`. Every existing HW item is registered at `0450` (450/750 V). Reproduced as written — not corrected.
7. **Construction text reads "cross linked halogen free flame-retardant compound thermoplastic".** Thermoplastic and cross-linked are alternatives, not one compound. Reproduced as written — please confirm the intended wording.
8. **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.
9. **Third-party marks removed.** NABL and the other third-party accreditation artwork deleted from the accreditation and approval blocks. ISI mark and ISO 9001 badge added to every sheet.
10. **Images.** Fig. 2 sheath print reads INDOCABLES, so the original render is retained. Fig. 1 cross section kept as-is.
11. **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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