ISO Class 1 cleanroom drag-chain series

# SD 776 / SD 780 C / SD 787 C TP

## Cleanroom Drag-Chain Cable



ISO Class 1 cleanroom unscreened, braided & twisted-pair drag-chain series

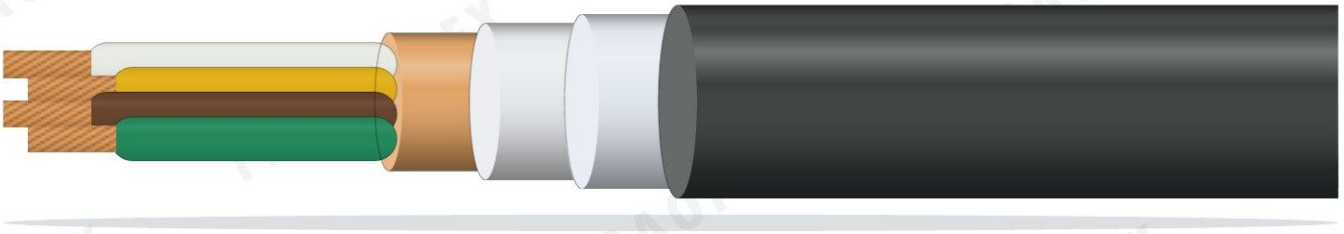
**ISO 14644-1 Class 1** | **SD 776 / 780 C / 787 C TP** | **5×–7.5×OD Cleanroom Chain**

## Application

Three-model ISO 14644-1 Class 1 cleanroom continuous-flex drag-chain series — SD 776 (unscreened), SD 780 C (overall copper-braided) and SD 787 C TP (twisted-pair copper-braided) — with low-outgassing TPE insulation and non-particulating PUR sheath.

**Typical uses:** Semiconductor EFEM & Wafer Stages, Overhead Hoist Transport (OHT/AMHS), OLED / Micro-LED Vacuum Chambers, Battery Dry-Room Stacking Gantries, Medical Diagnostic Linear Scanners

## Construction





Cross-section, not to scale

1. Superfine copper conductor
2. Low-outgassing TPE insulation
3. Non-shedding PTFE sliding wrap
4. ISO Class 1 cleanroom PUR sheath

## Technical data

Typical values

| | | | |
|---|---|---|---|
| Rated voltage U0/U | 300/500 V (≥ 0.5 mm²) · 300/350 V (≤ 0.34 mm²) | AC test voltage | 2000 V / 3000 V AC (50 Hz, 5 min) |
| Screen / Field control | SD 776: None · SD 780 C & 787 C TP: ≥ 85 % Cu braid | Mutual capacitance | ≈ 60 pF/m (core/core) · ≈ 110 pF/m (core/screen) |
| Temperature, flexing | −40 °C to +80 °C | Temperature, fixed installation | −50 °C to +90 °C |
| Max. conductor temperature | +90 °C (+80 °C UL AWM) | Min. bending radius, moving | 5 × OD (SD 776) · 7.5 × OD (SD 780 C & SD 787 C TP) |
| Min. bending radius, fixed | 3 × OD (SD 776) · 4 × OD (SD 780 C & SD 787 C TP) | Max. travel speed | 5 m/s gliding · 10 m/s unsupported |
| Max. acceleration | Up to 50 m/s² | Endurance cycles | ≥ 10,000,000 flex cycles in linear carrier |
| Cleanroom classification | ISO 14644-1 Class 1 · US Fed. Std. 209E Class 1 | Outgassing (AMC / VOC) | Ultra-low VOC/SVOC outgassing per ISO 14644-8 |
| Halogen-free & LABS-free | IEC 60754-1/2 halogen-free & 100 % silicone-free | Flame retardance | IEC 60332-1-2 · UL 1581 FT1 / VW-1 |
| Standards | ISO 14644-1 Class 1 & VDI 2083 Part 9.1 | | |

## Sizes

18 standard constructions

**Tick the sizes you need** and send this page to info@tebaoflex.com or WhatsApp +86 185 9591 3361.

| Order designation | Configuration | Screening & lay | Outer Ø ≈ mm | Total Cu kg/km | Weight ≈ kg/km | Min. bend R chain mm |
|---|---|---|---|---|---|---|
| **SD 776 — Unscreened Cleanroom Drag-Chain Cables (5 × OD)** 6 sizes | | | | | | |
| ☐ SD 776 4×0.25 | 4×0.25 | Unscreened | 4.5 | 10 | 27 | 23 |
| ☐ SD 776 7×0.25 | 7×0.25 | Unscreened | 5.4 | 17 | 39 | 27 |
| ☐ SD 776 4G0.5 | 4G0.5 | Unscreened | 5.4 | 19 | 42 | 27 |
| ☐ SD 776 7G0.5 | 7G0.5 | Unscreened | 6.6 | 34 | 66 | 33 |
| ☐ SD 776 12G0.75 | 12G0.75 | Unscreened | 9.4 | 86 | 142 | 47 |
| ☐ SD 776 4G1.5 | 4G1.5 | Unscreened | 7.3 | 58 | 92 | 37 |
| **SD 780 C — Copper-Braided Cleanroom Drag-Chain Cables (7.5 × OD)** 6 sizes | | | | | | |
| ☐ SD 780 C 4×0.25 | 4×0.25 C | ≥ 85 % Cu Braid | 5.1 | 20 | 38 | 38 |
| ☐ SD 780 C 7×0.25 | 7×0.25 C | ≥ 85 % Cu Braid | 6.0 | 30 | 54 | 45 |
| ☐ SD 780 C 4G0.5 | 4G0.5 C | ≥ 85 % Cu Braid | 6.0 | 32 | 57 | 45 |
| ☐ SD 780 C 7G0.5 | 7G0.5 C | ≥ 85 % Cu Braid | 7.3 | 52 | 86 | 55 |
| ☐ SD 780 C 12G0.75 | 12G0.75 C | ≥ 85 % Cu Braid | 10.2 | 118 | 178 | 77 |
| ☐ SD 780 C 4G1.5 | 4G1.5 C | ≥ 85 % Cu Braid | 8.1 | 84 | 124 | 61 |
| **SD 787 C TP — Twisted-Pair Copper-Braided Cleanroom Cables (7.5 × OD)** 6 sizes | | | | | | |
| ☐ SD 787 C TP 2×2×0.14 | 2×2×0.14 C TP | TP + ≥ 85 % Braid | 5.2 | 18 | 36 | 39 |
| ☐ SD 787 C TP 4×2×0.14 | 4×2×0.14 C TP | TP + ≥ 85 % Braid | 6.3 | 29 | 54 | 47 |
| ☐ SD 787 C TP 4×2×0.25 | 4×2×0.25 C TP | TP + ≥ 85 % Braid | 7.1 | 42 | 74 | 53 |
| ☐ SD 787 C TP 8×2×0.25 | 8×2×0.25 C TP | TP + ≥ 85 % Braid | 9.4 | 76 | 128 | 71 |
| ☐ SD 787 C TP 4×2×0.50 | 4×2×0.50 C TP | TP + ≥ 85 % Braid | 8.8 | 68 | 112 | 66 |
| ☐ SD 787 C TP 8×2×0.50 | 8×2×0.50 C TP | TP + ≥ 85 % Braid | 11.6 | 128 | 198 | 87 |

– Custom core counts (up to 36G) and pair counts (up to 16×2) are manufactured across all three Cleanroom SD series.

## Electrical parameters by cross-section

5 sizes

| Cross-section | Applicable series | Max. DC R @ 20 °C Ω/km | Max. current at +30 °C (A) | C core/core pF/m≈ | AC test V rms |
|---|---|---|---|---|---|
| 0.14 mm² (AWG 26) | SD 776 · SD 780 C · SD 787 C TP | 138.0 | 2.0 | 55 | 1,500 |
| 0.25 mm² (AWG 24) | SD 776 · SD 780 C · SD 787 C TP | 79.0 | 4.0 | 58 | 2,000 |
| 0.50 mm² (AWG 20) | SD 776 · SD 780 C · SD 787 C TP | 39.0 | 8.0 | 62 | 3,000 |
| 0.75 mm² (AWG 19) | SD 776 · SD 780 C | 26.0 | 12.0 | 65 | 3,000 |
| 1.50 mm² (AWG 16) | SD 776 · SD 780 C | 13.3 | 18.0 | 70 | 3,000 |

– Low-capacitance TPE insulation (~55–62 pF/m) on SD 787 C TP supports high-speed differential linear stage encoders without pulse distortion.

## Standards and approvals

- ISO 14644-1 Air Cleanliness Class 1 Qualified
- UL AWM Style 21576 / 20233 (80 °C 600/1000 V) · CSA
- CE, RoHS 2 (2011/65/EU) & 100 % Halogen/Silicone-Free

## Certifications

**Management systems:** ISO 9001, ISO 14001, ISO 45001

## Request a quotation

Send the size, length and destination. An application engineer replies within 2 business hours.

WhatsApp / phone
**+86 185 9591 3361**

Email
**info@tebaoflex.com**

Web
**tebaoflex.com/cables/sabclean-sd-776-sd-780-c-sd-787-c-tp-cleanroom-continuous-flex-drag-chain-cable**

Typical values for this cable type, based on ISO 14644-1 Class 1 / DIN VDE 0285 / UL AWM. Values for your order are confirmed in the quotation. Subject to change without notice. Jiangsu Tebaoflex Special Cable Co., Ltd., Taicang, Jiangsu, China.