APPENDIX 2 – VR08 Components

1. Underground ABF Construction Material
   * Air Blown Fibre multi duct and tubes
   * Air Blown Fibre cable and fibre-units
   * Conventional underground duct, fibre cables and components
   * Underground inspection pits and direct buried closures

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| **Item Type** | **Generic product description and requirements** |
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| **ABF Products** |  |
| Thick-wall Microduct | Access multi-duct, 12 x 7/3.5mm + 2 x 14/10mm, thick walled tubes, direct buried. |
| Thick-wall Microduct | Access multi-duct, 24 x 7/3.5mm, thick walled tubes, direct buried |
| Thick-wall Microduct | Access multi-duct, 24 x 7/3.5mm + 1x 14/10mm, thick walled tubes, direct buried |
| Thick-wall Microduct | Access multi-duct, 24 x 7/3.5mm + 2 x 14/10mm, thick walled tubes, direct buried |
| Thick-wall Microduct | Access FLAT multi-duct, 12 x 7/3.5mm, thick walled tubes, direct buried, suitable for micro-trench slots (up to 50mm) |
| Thick-wall Microduct | Access FLAT multi-duct, 12 x 7/3.5mm + 1x 14/10mm, thick walled tubes, direct buried, suitable for micro-trench slots (up to 50mm) |
| Thick-wall Microduct | Access FLAT multi-duct, 12 x 7/3.5mm + 2x 14/10mm, thick walled tubes, direct buried, suitable for micro-trench slots (up to 50mm) |
| Thick-wall Microduct | Feeder multi-duct, 7 x 14/10mm, thick-walled tubes, direct buried. |
| Thick-wall Microduct | Feeder FLAT multi-duct, 2 x 14/10mm, thick-walled tubes, direct buried, suitable for micro-trench slots (up to 50mm). |
| Thick-wall Microduct | Feeder FLAT multi-duct, 7 x 14/10mm, thick-walled tubes, direct buried, suitable for micro-trench slots (up to 50mm). |
| Thick-wall Microduct | Drop duct, 1 x 14/10mm, thick-walled tube, direct buried or duct. |
| Thick-wall Microduct | Drop duct, 1 x 7/3.5mm, thick-walled tube, direct buried or duct. |
| Thick-wall Microduct | 1 x 5/3.5mm micro-duct suitable for direct burying |
| Thick-wall Microduct | 1 x 12/9.6mm micro-duct suitable for direct burying |
| Thick-wall Microduct | Bundle of 24 x 5/3.5mm micro-ducts for distribution plus 1 x 10/8mm micro-duct suitable for direct burying. |
| Thick-wall Microduct | Bundle of 24 x 5/3.5mm micro-ducts for distribution plus 1 x 10/8mm micro-duct suitable for direct insertion into existing duct. |
| Thick-wall Microduct | Bundle of 7 x 12/9.6mm micro-ducts suitable for direct burying |
| Thick-wall Microduct | Bundle of 7 x 12/9.6mm micro-ducts suitable for direct insertion into existing duct. |
| Duct Management Closure | Outer cold joint closure for 24x5mm duct (permanently sealed). Suitable for direct burying |
| Duct Management Closure | Outer cold joint closure for 24x5mm duct (re-openable). Suitable for direct burying |
| Duct Management Closure | Outer cold joint closure for 7x12mm duct (permanently sealed). Suitable for direct burying |
| Duct Management Closure | Outer cold joint closure for 7x12mm duct (re-openable). Suitable for direct burying |
| Duct Management Closure | Branch joint for 24 way duct to split off up to 4 5mm tubes (re-openable). Suitable for direct burying |
| Connectors | 14/10 mm OD protected connector, Suitable for direct burying (water tight) |
| Connectors | 7/3.5 mm OD protected connector, Suitable for direct burying (water tight) |
| End Cap | 7/3.5 mm tube endcap, Suitable for direct burying (water tight) |
| End Cap | 14/10 mm tube endcap, Suitable for direct burying (water tight) |
| Gas Seal | 7/3.5 mm tube gas seal, Suitable for direct burying (water tight) |
| Gas Seal | 14/10 mm tube gas seal, Suitable for direct burying (water tight) |
| Connectors | 12/9.6 mm OD protected connector, Suitable for direct burying (water tight) |
| Connectors | 5/3.5 mm OD protected connector, Suitable for direct burying (water tight) |
| End Cap | 5/3.5 mm tube endcap, Suitable for direct burying (water tight) |
| End Cap | 12/9.6 mm tube endcap, Suitable for direct burying (water tight) |
| Gas Seal | 5/3.5 mm tube gas seal, Suitable for direct burying (water tight) |
| Gas Seal | 12/9.6 mm tube gas seal, Suitable for direct burying (water tight) |
| ABF Mini Cable | 2-core ABF cable suitable for installation into 3.5mm ID tubing, Gel Filled, G652D Fibre. |
| ABF Mini Cable | 6-core ABF cable suitable for installation into 3.5mm ID tubing, Gel Filled, G652D Fibre. |
| ABF Mini Cable | 12-core ABF cable suitable for installation into 3.5mm ID tubing, Gel Filled, G652D Fibre. |
| ABF Mini Cable | 24-core ABF cable suitable for installation into 8 or 10mm ID tubing, Gel Filled, G652D Fibre. |
| ABF Mini Cable | 144-core ABF cable suitable for installation into 8 or 10mm ID tubing, Gel Filled, G652D Fibre |
| ABF Mini Cable | 192-core ABF cable suitable for installation into 8 or 10mm ID tubing, Gel Filled, G652D Fibre. |
| ABF Mini Cable | 216-core ABF cable suitable for installation into 10mm ID tubing, Gel Filled, G652D Fibre. |
| Chamber/Pit Vaults | Footpath rated Class B Underground pit suitable as an intermediate blowing point and for accommodation of fibre splice closure (up to 216-core cables). |
| Chamber/Pit Vaults | Carriageway rated Class D Underground pit suitable as an intermediate blowing point and for accommodation of fibre splice closure (up to 216-core cables). |
| Chamber Vaults | 1200 x 600 x 900 Footway Class B |
| Chamber Vaults | 1200 x 1200 x 900 Footway Class B |
| Chamber Vaults | 1200 x 600 x 900 Roadway Class D |
| Chamber Vaults | 1200 x 1200 x 900 Roadway Class D |
| Fibre Optic Closure | Splice closure with up to 48 fibre fusion splicing, spare tube management, IP rated, suitable for installation in a chamber / pit. Mechanically sealed ports (no heat shrink), Single Circuit Management, Includes all trays etc |
| Fibre Optic Closure | Splice closure with up to 96 fibre fusion splicing, spare tube management, IP rated, suitable for installation in a chamber / pit. Mechanically sealed ports (no heat shrink), Single Circuit Management, Includes all trays etc |
| Fibre Management Cabinets | Above ground pedestal / cabinet (no integral splice closure). Ability to house and manage at least 4 separate units of ABF multi-duct. |
| Fibre Management Cabinets | Above ground pedestal / cabinet (with integrated splice closure). Up to 96 fibre splicing. Ability to house and manage at least 4 separate units of ABF multi-duct. Includes all trays etc. |
| Fibre Management Cabinets | Road side cabinet. Including rails, OFDF and cable management. 288 customer connection capacity on access side. Feeder side is comprised of 5% point-to-point links and 95% PON |
| Plinth for Cabinet | Plinth for above PON Cabinet |
| Splitters | Optical splitters with 1:32 split ratio and pre-connectorised fan out tails |
| Connectors | Field installable SC APC simplex connector, or |
| Connectors | Field installable LC APC simplex connector |
| Demarc Box | Demarcation box for mounting on outside house wall. Minimum IP44 rated (prefer IP66). Enough space for loop of G.652D 2-core fibre, and 2 SC through-connectors. |
| Termination Box | Internal wall mounted fibre termination box for customer connection. Compact size. Able to accommodate up to two SC through connectors |
| Tube Cable | Internal duct LSZH 5mm (external diameter) |
| Splice Closure | Splice closure for up to 624 fibre splices using conventional loose tube cables, spare tube management, IP rated, suitable for installation in a chamber / pit. Includes all trays etc |
| Splice Closure | Splice closure for up to 2000 fibre splicing using ribbon fibre cables, spare tube management, IP rated, suitable for installation in a chamber / pit. Includes all trays etc |
| Duct | Protective Duct 100mm PE (Coil) |
| Duct | Protective Duct 63mm PE (Coil) |
| Duct | Protective Duct 50mm PE (Coil) |
| Duct | Protective Duct 100mm PVC (Stick) |
| Duct | Protective Duct 63mm PVC (Stick) |
| Duct | Protective Duct 50mm PVC (Stick) |
| Ribbon cable | FOC, 24-2000F, Dielectric, Ribbon cable, Cable Telecom Spec 2kN tensile strength, G652.D |
| Ribbon cable | FOC, 24-2000F, Armoured, Ribbon cable, Cable Telecom Spec 2kN tensile strength, G652.D |
| Cable | FOC, 2-288F, Dielectric, Loose tube, Cable Telecom Spec 2kN tensile strength, G652.D |
| Cable | FOC, 2-288F, Armoured, Loose tube, Cable Telecom Spec 2kN tensile strength, G652.D |
| Lead-in/Drop Cable | ADSS Pre-Connectorised 25-150 m 1F Underground Lead-in/Drop Cable, G657.A |
| Lead-in/Drop Cable | ADSS Pre-Connectorised 25-150 m 2F Underground Lead-in/Drop Cable, G657.A |
| U/G customer connection | 2-core ABF unit on 100-500m reel with one simplex SC connector preinstalled on one end, G657.A |
| U/G customer connection | 2-core ABF unit on 2000-4000m reel, G657.A |

1. Aerial ABF Construction Material
   * Air Blown Fibre multi duct and tubes
   * Air Blown Fibre cable and fibre-units

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| **Item Type** | **Sub-Type** | **Generic product description and requirements** |
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| Aerial Microduct assembly | Overhead (aerial) feeder from CO to pole mounted FCP | Self supporting aerial duct (8x5mm tubes + 2x10mm tubes) |
| Aerial Microduct assembly | Overhead (aerial) feeder from CO to pole mounted FCP | Self supporting aerial duct (12x5mm tubes + 1x10mm tubes) |
| Fibre Optic Cable | Overhead (aerial) feeder from CO to pole mounted FCP | 96-core ABF cable suitable for blowing into 10mm tubing, G.652.D |
| Accessories | Overhead (aerial) feeder from CO to pole mounted FCP | Suspension clamp with securing bolt for attachment of aerial duct (or cable) to a cross-arm of the pole |
| Accessories | Overhead (aerial) feeder from CO to pole mounted FCP | Anchoring clamp for attachment of aerial duct (or cable) to a cross-arm of the pole |
| Duct Management Closure | Overhead (aerial) feeder from CO to pole mounted FCP | Splice closure for aerial installation fibre distribution (suitable for feeding 24 customers, pole mounted) |
| Duct Management Closure | Overhead (aerial) feeder from CO to pole mounted FCP | Branch joint for aerial duct (refer to duct size above) |
| Aerial Microduct assembly | Overhead road crossing for customer connections | Self supporting aerial duct (4x5mm tubes) |
| Accessories | Overhead road crossing for customer connections | Anchoring clamp + hook for aerial duct road crossing |
| Duct Management Closure | Overhead road crossing for customer connections | Duct break out enclosure for (8x5 + 2x10mm) duct |
| Aerial Microduct | Overhead customer connection | Self supporting aerial duct 5mm |
| Accessories | Overhead customer connection | Suspension clamp for 5mm aerial duct |
| ABF Fibre assembly | Overhead customer connection | 2-core ABF unit on 100m reel with one simplex SC connector preinstalled on one end, G657.A |
| ABF Fibre assembly | Overhead customer connection | 2-core ABF unit on 250m reel with one simplex SC connector preinstalled on one end, G657.A |
| ABF Fibre assembly | Overhead customer connection | 2-core ABF unit on 500m reel with one simplex SC connector preinstalled on one end, G657.A |
| ABF Fibre assembly | Overhead customer connection | 2-core ABF unit on 2000m reel, G657.A |
| ABF Fibre assembly | Overhead customer connection | 2-core ABF unit on 4000m reel, G657.A |
| Connectors | Overhead customer connection | Field installable SC APC simplex connector |
| Connectors | Overhead customer connection | Field installable LC APC simplex connector |

1. Aerial ADSS Construction Material
   * ADSS Cable
   * Overhead cable joint systems
   * Service Connection Terminals

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| **Item Type** | **Sub-Type** | **Generic product description and requirements** |
| Fibre Optic Cable | ADSS | FOC, 144F, ADSS cable up to 150m span, G652.D |
| FOC, 96F, ADSS cable up to 150m span, G652.D |
| FOC, 48F, ADSS cable up to 150m span, G652.D |
| FOC, 24F, ADSS cable up to 90m span, G652.D |
| FOC, 12F, ADSS cable up to 90m span, G652.D |
| Closures | Network Interface Device | OF/CU Internal Termination Box |
| Internal Customer Termination Box with 2 x SC or 1 x LC Duplex Adapter min. |
| Fibre Optic Cable | Lead-in/Drop Cable | ADSS LC Pre-Connectorised 25m 1-2F Aerial Lead-in/Drop Cable, G657.A |
| ADSS LC Pre-Connectorised 50m 1-2F Aerial Lead-in/Drop Cable, G657.A |
| ADSS LC Pre-Connectorised 75m 1-2F Aerial Lead-in/Drop Cable, G657.A |
| ADSS LC Pre-Connectorised 100m 1-2F Aerial Lead-in/Drop Cable, G657.A |
| ADSS LC Pre-Connectorised 150m 1-2F Aerial Lead-in/Drop Cable, G657.A |
| Closures | Fibre Optic Closure | Pole/Wall Mount Distribution Closure - 2 Fibre cable entries, 8 x Drop cable entries - Not Connectorised |
| Pole/Wall Mount Distribution Closure - 2 Fibre cable entries, 8 x Drop cable entries - Pre Connectorised |
| Joint Closure, 48F Fusion Splices |
| Closures | Mounting Bracket, Joint Closure |
| Fibre Optic Closure | Joint Closure, Small, 1 Express (oval) Port, 4 x Drop cable port, 144F, Fusion Splices |
| Joint Closure, Large, 366F Fusion Splicing |
| Joint Closure, Large, 672F Fusion Splicing |
| Joint Closure, Medium, 144F, Fusion Splices with support for PLC Splitters |
| Joint Closure, Large, 1 Express (oval) Port, 4 Round Ports, 768F, Fusion Splicing |
| Accessories | Branch Off Kit |
| Trays | Splice Tray to accommodate up to 16 Splices |
| Splice Tray to accommodate up to 24 Splices |
| 2 trays to fit [xxx] closure able to accommodate 12 fusion splices |
| 4 trays to fit [xxx] closure able to accommodate 12 fusion splices |
| Organizer tray kit for splice closure |

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| Closures cont. | Splitter | Fibre PLC Splitter 1:32 SM Upstream fusion splice and downstream in LC/APC tails |
| Fibre PLC Splitter 1:16 SM Upstream fusion splice and downstream in LC/APC tails |
| Fibre PLC Splitter 1:4 SM Upstream fusion splice and downstream in LC/APC tails |
| Fibre PLC Splitter 1:4 SM Not connectorized - 2.5m tails |
| Fibre PLC Splitter 1:4 SM. With LC/APC - 1.5m Tails |
| Optical Distribution Frame | MOFDFs | Splice & Patch Shelf 3RU, up to 144 fibres |
| Splice & Patch Trays for Splice & Patch Shelf up to 12 fibres per Tray |
| Mounting Bracket for Splice Closure |
| High Density 48 Fibre Capable drawers - 3RU |
| COFDFs | Mounting Bracket for installation of 1RU Shelf into ETSI Rack |
| Fibre 24F Swingout Splice & Patch Shelf Empty |
| Overhead Hardware | Terminations | Aerial deadend for 16-18mm cable |
| Aerial deadend for 14-16mm cable |
| Aerial deadend for 10-14mm cable |
| Aerial deadend for 8.2 mm cable |
| Aerial deadend for 3-6 mm cable |
| Aerial deadend for 6-9 mm cable |
| Through Clamps | Aluminium Through Clamps |
| Bracket | Cross Arm Mounting Bracket |
| Rubbers | Rubbers for 17.2-18.4mm cable (144CF) |
| Rubbers for 14.7-15.9mm cable (96CF) |
| Rubbers for 13.4-14.6mm cable (48CF) |
| Rubbers for 7.0-8.2mm cable (24CF) |
| Cable Spiral Wrap Tie 25mm Black ( 10m ) |
| Cust Premise Equip | Clamp | ADSS Fibre clamp 6-9mm |
| Manholes | Sika | Manhole Aluminium 122x600x700 (with Logo) |
| Sika Steel kit | Steel Kit for manhole |
| Split Pit5 | PIT5-SPLIT & ALI LID - with Logo |
| Bung | Pit Lid Lock Block Bung |