

Structured Cabling Infrastructure Specification Category 5e and 6a

Version R1.1

Prepared by Senior Network Engineer

City College Plymouth

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| Owned by | Senior Network Engineer |
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| Signed-off by | Head of IT |

Revision History

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| **Name** | **Date** | **Reason For Changes** | **Version** |
| Roger Tipper | 14/10/2016 | Retirement of previous documents | D1.0 |
| Roger Tipper | 21/10/2016 | Formal Release | R1.0 |
| Roger Tipper | 24/10/2016 | Minor updates | R1.1 |

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1.0 Component Specification

# 1.1 General

This document relates to cabling at City College Plymouth whereby Cat5e is the current standard around the site with the exception of the STEM building adjacent to Kings Road. This new build will be CAT6/6a (to be finalised).

In due course, Cat6 will be the standard used for sizeable future work eg a complete floor being re-cabled.

# 1.2 Principles

The underlying principle is that all materials used (cable, wall boxes, patch panels etc) will meet (or exceed) the industry standards (ISO/EIC, EN, TIA) relating to the component. The standards are not reproduced here hence contractors should state the compliance and the standard used.

Cables should be unshielded (UTP) and low smoke (LSOH). Capable of supporting Giganet networking.

The college has previously used Krone (TE Connectivity) cables and components. All new cables and components should be equal quality and will need to be approved by the college IT Services.

2.0 Pre-Installation and Installation

# 2.1 Pre-Installation and Installation

1) All locations of works should be confirmed in advance with either the Senior Network Manager or the Frontline Manager. This is especially important when dealing with different network cabinets and updates to existing systems.

2) Any cables being removed must be properly disconnected and not just cut as this damages the switches. Cabling should be removed in its entirety where requested.

3) All testing and documentation must be completed (see relevant sections)

3.0 Testing

# 3.1 General

Testing standards should be appropriate and should the match data cabling used as published in [ANSI/TIA/EIA-568-x (where x represents the latest approved standard).1](https://en.wikipedia.org/wiki/TIA/EIA-568-B) standard and the [ISO/IEC 11801](https://en.wikipedia.org/wiki/ISO/IEC_11801) standard. In all cases the latest version of the standard should be used and the standard declared by the company carrying out the tests.

**A simple connectivity test is insufficient and will not be accepted.**

If the testing is found to be conducted on anything but the above then all test results shall be declared invalid and 100% re-testing must be conducted at the cost of the Vendor. Access times for this re-testing shall be at the discretion of Client.

Client reserve the right to conduct they own acceptance testing. This may consist of:

* Visual inspection of structured wiring system
* 10% Witness testing of randomly selected outlets using an appropriate analyser.

Client shall have the right to reject the system because of any ‘Service-Affecting’ faults found during the ‘in-house’ acceptance testing. Under these circumstances it shall be the responsibility of the Vendor to rectify any problems at their cost.

4.0 Documentation

# 4.1 General

The hand over documentation must be submitted 1 month after final contract acceptance. The documents must be in electronic format and include:

*Test results*: Test all installed permanent links (category 5e and/or 6, as applicable).

Test results must contain

* The TIA/ISO/EIC etc testing standard used
* Room number, patch panel and outlet number (as a unique identifier)

Data must include (as a minimum):

* Wiremap, results per pair, cable length, skew, speed, error count,
* The format for electronic files must be in PDF (or FLW in discussion with the college)

*Floor Plans (optional – as stated on the order)*: The successful Vendor will be given building drawings to annotate with outlet positions and numbering, cable routes with size, location and type (e.g. 300mm/riser/wire basket), cabinet positions and numbering, risers, floor boxes with size, layout and numbering. The site drawings will be in DWG (AutoCAD) format and the submitted drawings must be in the same format. The outlets, containment, cabinets, risers, floor boxes and cable routes must all be on their own unique layer.

*Patching*: All patching records must be submitted in XLS (Microsoft Excel 2010 or above) or Google Sheets. Suppliers should check with the college whether an existing document is to be updated or a new one created:

Cabinet details:

* Server room, patch panel number and outlet number and the destination room number/wall socket number
* the switch number and port (if requested to connect the patch panel to the switch)

Room Details:

* room, patch panel number and outlet

Example:



*Labelling:*

* All patch panels and outlet numbers must be uniquely labelled to show the relevant room/wall socket number
* All wall sockets to show server room number/patch number/outlet
* Labelling in the rooms must commence from 1 at the door (as if entering the room) and work clockwise around the room.

5.0 Warranty

# 5.1 General

Details of the warranty(s) must be submitted at the tender process and should, at a minimum, meet the following requirements.

A 20 year warranty including zero bit error rate must be issued on completion.