



## Comparative Overview of International Structured Cabling Standards

There is a misconception that the three main international structured cabling standards are interchangeable. Unfortunately, there are some top-line differences between them, and these are identified below. Additionally, there are other more technically specific differences e.g. return loss measurement for a link, which are too numerous to list, but about which KRONE can advise upon request.

	TIA/EIA 568-A (+TSBs 67,72,75)	ISO/IEC 11801	EN 50173
<b>100Ω horizontal</b>	<sup>2</sup> UTP recommended @ TO	UTP/FTP recommended @ TO	<sup>1</sup> UTP/FTP recommended @ TO
<b>120Ω horizontal</b>	Not supported	<sup>3</sup> UTP/FTP supported	<sup>3</sup> UTP/FTP supported
<b>150Ω horizontal</b>	Supported	Supported	Supported
<b>Fibre horizontal</b>	<sup>5</sup> 62.5/125 MM	<sup>4</sup> 50/125 & 62.5/125 MM	<sup>4</sup> 50/125 & 62.5/125MM
<b>100Ω backbone</b>	Supported	Supported	Supported
<b>120Ω backbone</b>	Not supported	Supported	Supported
<b>150Ω backbone</b>	Supported	Supported	Not supported
<b>Fibre backbone</b>	SM & 62.5/125 MM	SM, <sup>4</sup> 50/125 & 62.5/125 MM	SM, <sup>4</sup> 50/125 & 62.5/125 MM
<b>Horizontal bend radius</b>	> 4x cable O.D. @ termination point	> 4x cable O.D. @ termination point	> 4x cable O.D. @ termination point
<b>Backbone bend radius</b>	> 10x cable O.D. @ termination point	>6x cable O.D. @ termination point	>6x cable O.D. @ termination point
<b>Bend radius during pulling</b>	Not specified	>8x cable O.D.	>8x cable O.D.
<b>Cabling components</b>	<sup>7</sup> Category 3,4 & 5	<sup>7</sup> Category 3,4 & 5	<sup>6</sup> Category 3 & 5
<b>Link/channel performance</b>	Cat. 3 to 16MHZ Cat. 4 to 20MHZ Cat.5 to 100MHZ	Class C to 16MHZ Cat. 3 to 16MHZ Cat. 4 to 20MHZ Class D to 100MHZ Cat. 5 to 100MHZ Class E (optical) above 100MHZ	Class C to 16MHZ Cat. 3 to 16MHZ Class D to 100MHZ Cat. 5 to 100MHZ Class E (optical) above 100MHZ
<b>Basic link performance</b>	Supported	Not supported	Not supported
<b>Link performance</b>	Not supported	Supported	Supported
<b>Channel performance</b>	Supported	<sup>8</sup> Not supported	<sup>8</sup> Not supported
<b>RJ45 configuration</b>	4 pairs only	2 or 4 pairs	2 or 4 pairs
<b>TO cabling configuration</b>	Wire-pin T568A/T568B	<sup>10</sup> Pairs-pins only	<sup>10</sup> Pairs-pins only
<b><sup>9</sup>Patch cable attenuation</b>	<120% of horizontal cable	<150% of horizontal cable	<150% of horizontal cable
<b>Application mapping</b>	No reference	<sup>11</sup> Comprehensive tables	<sup>11</sup> Grouped by link class



## Notes

- 1 The standard recommends 100 Ohm balanced cabling, which can be unscreened or screened. There is no difference between "screened" and "shielded" cabling.
- 2 The USA market has been predominately UTP and this is reflected in the standard.
- 3 This is predominately a French market requirement, and is non-preferred.
- 4 Both EN50173 and ISO/IEC 11801 recommend 62.5/125, but allow the use of 50/125 fibre.
- 5 TIA/EIA 568-A does not support the use of 50/125 fibre.
- 6 EN50173 recommends at least two TOs / work area, one Category 5 100 Ohm and one Category 5, 150 Ohm or fibre.
- 7 ISO/IEC 11801 and TIA/EIA 568-A recommend Category 3 or higher for the first TO, and Category 5, 150 Ohm or fibre for the second TO.
- 8 End to end performance is not specified in either EN50173 or ISO/IEC 11801, and is beyond the scope of the standards. However, the channel performance can be derived by allowing for the equipment cord performance with the link performance.
- 9 There is no patch cord assembly standard available yet.
- 10 EN50173 and ISO/IEC 11801 do not recognise any colour code scheme, and allow the user to decide the code to be used provided that it is consistent throughout the generic cabling system.
- 11 EN50173 and ISO/IEC 11801 recognise supported applications which will run on each class / Category.

**For further information on these and related standards, and how they may affect your future plans to implement and use structured cabling, please contact KRONE's Technical Department.**