

# BS EN 62305 – key points

The following table gives a broad outline as to the key variances between the outgoing standard, BS 6651, and the new standard BS EN 62305.

BS 6651 standard	BS EN 62305 standard
<b>Document structure</b>	
118 page document, including 9 pages devoted to risk assessment	475 page document, separated into 4 parts, including 153 pages devoted to risk assessment (BS EN 62305-2)
Focus on Protection of Structures against Lightning	Broader focus on Protection against Lightning including the structure and services connected to the structure
Specific tables relating to choice and dimension of Lightning Protection System components and conductors	Specific tables relating to sizes and types of conductor and earth electrodes. Lightning Protection System components – specifically related to BS EN 50164 testing regimes
Annex B – guidance on application of BS 6651	BS EN 62305-3 Annex E – extensive guidance given on application of installation techniques complete with illustrations
Annex C – general advice (recommendation) for protection of electronic equipment with separate risk assessment	BS EN 62305-4 is devoted entirely to protection of electrical and electronic systems within the structure (integral part of standard) and is implemented through single separate risk assessment (BS EN 62305-2)
<b>Definition of risk</b>	
Risk (of death/injury) level set at 1 in 100,000 ( $1 \times 10^{-5}$ ) based on comparable exposures (smoking, traffic accidents, drowning etc)	3 primary risk levels defined: $R_1$ loss of human life 1 in 100,000 ( $1 \times 10^{-5}$ ) $R_2$ loss of service to the public 1 in 10,000 ( $1 \times 10^{-4}$ ) $R_3$ loss of cultural heritage 1 in 10,000 ( $1 \times 10^{-4}$ )
<b>Protection measures</b>	
Mesh arrangement is promoted as the commonly used means of air termination network	Mesh arrangement, protective angle method, catenary system, extensive use of air finials, all form part of or all of air termination network
2 levels of Lightning Protection mesh design: (20m x 10m; 10m x 5m)	4 sizes of mesh defined according to structural class of Lightning Protection System: Class I 5m x 5m      Class II 10m x 10m Class III 15m x 15m      Class IV 20m x 20m
2 levels of down conductor spacing: 20m & 10m	4 levels of down conductor spacing dependent on structural class of Lightning Protection System: Class I 10m      Class II 10m Class III 15m      Class IV 20m
Use of bonds promoted to minimise side flashing	Extensive sections/explanations provided on equipotential bonding
10 ohm overall earthing requirement, achieved by 10 x number of down conductors	10 ohms overall earthing requirement achieved either by Type A arrangement (rods) or Type B arrangement (ring conductor)
Requirement to bond all metallic services, (gas, water, electricity etc) to main earth terminal along with external down conductor	Requirement to bond all metallic services to main equipotential bonding bar. 'Live' electrical conductors (e.g. power, data, telecoms) bonded via Surge Protection Devices (SPDs)
Rolling sphere concept on structures over 20m tall: 20m sphere used on highly flammable contents/ electronic equipment within building 60m sphere all other buildings	4 sizes of rolling sphere concept defined according to structural class of Lightning Protection System: Class I 20m      Class II 30m Class III 45m      Class IV 60m