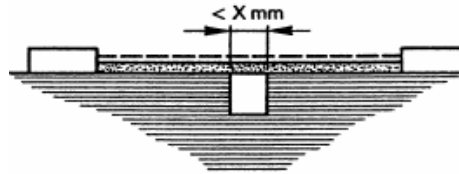


Group discussion

- Taking into consideration that one part of the Case A challenge included a $< X$ mm distance, which example in IEC 60664-1 is most applicable?
- In consequence, should a jump of X mm occur or not?
- Give reasons for your answers

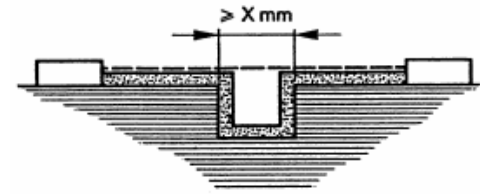


Example 1



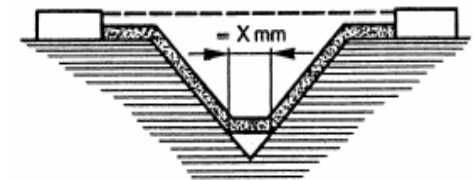
121

Example 2

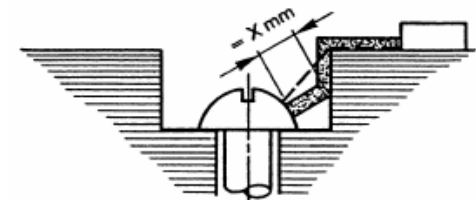
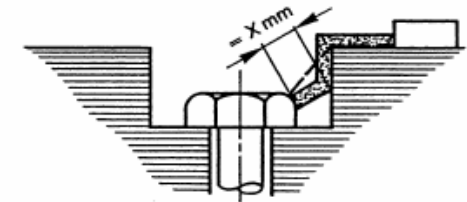


12

Example 3

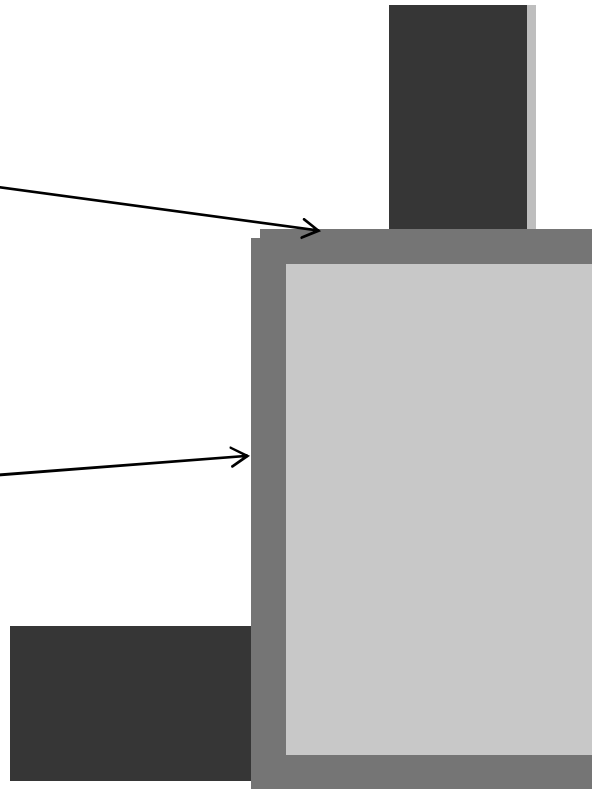


Example 10



Approx
0.8mm (<X)

Approx
2.0mm



Sample as an Extension of Example 1

The sample could be considered as an extension of Example 1, with the conductors moved to the edges of the rectangular groove and with one side of the groove reduced to zero depth (figure 1). In this interpretation the groove would be bridged by a link $x = 1.0\text{mm}$ (for PD2) at an angle determined by the geometry of the groove.

Sample as an Extension of Example 2

Alternatively, the sample could be considered as an extension of Example 2, with one side of the rectangular groove reduced to zero, and the measurement of x between the shoulders of the groove (figure 2C). Since the groove angle is 90 degrees the corner is not bridged.

Sample as an Extension of Example 3

However, the sample could also be considered as an extension of Example 3, with one of the conductors moved down one side to be close to the bottom of the groove (figure 3C). Since the groove angle is 90 degrees the corner is not bridged.

Sample as an Extension of Example 10

An argument has been put forward that the rule depicted in Example 10 should apply, since the sample could be considered as similar to that situation with one of the conductors (say T2) taking the place of the screw head and flush with the 'bottom' face of the groove (figure 4C). Applying this rule the corner would be bridged by a link = 1.0mm for PD2, at an angle determined by the geometry.

Discussion

The determination of the most reasonable interpretation of the rules for this case depends on what the Standards makers had in mind when creating the rule for bridging a groove. The only guidance given in the Standard (clause 6.2) is:

"The following assumptions are made:

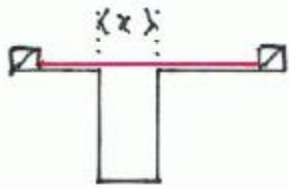
- Any **recess** is assumed to be bridged with an insulating link having a length equal to the specified width x and being placed in the most unfavourable position."

The assumption that is commonly made is that a **recess**, however defined, could attract dust etc and so create a surface for the creepage path.

IEC 60664-1
EXAMPLES

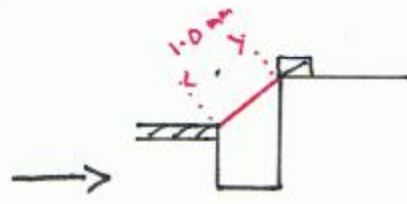
INTERMEDIATE
CASE

PTP 07e 30
SAMPLE

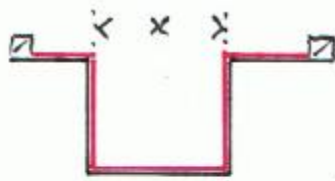
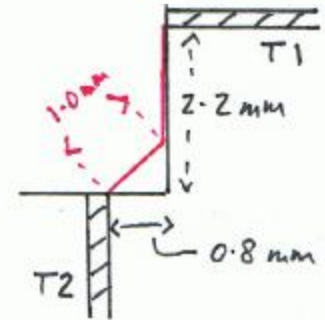


$x < 1.0 \text{ mm}$

EXAMPLE 1

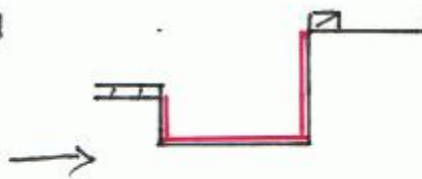


FIGURES 1A, B, C

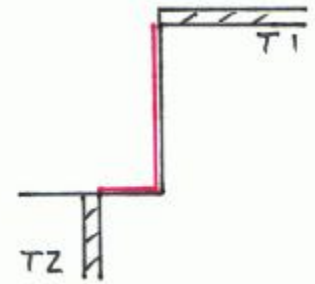


$x > 1.0 \text{ mm}$

EXAMPLE 2

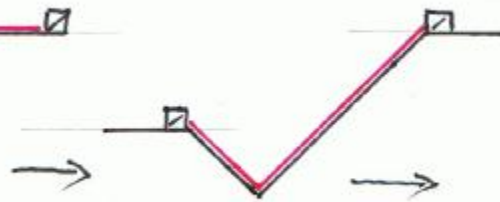


FIGURES 2A, B, C

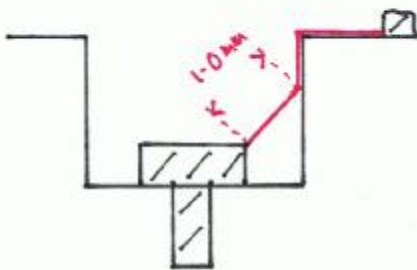


80° rule applies

EXAMPLE 3

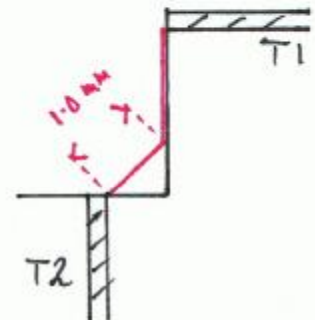


FIGURES 3A, B, C



EXAMPLE 10

FIGURES 4A, B, C



CREEPAGE PATH

ALL CASES DEPICTED FOR P 2