TABLE 4
MAXIMUM TEMPERATURE RISES FOR SOME MATERIALS[a]

(Reference Clauses: 7.6.20, 7.7.15, 7.8.6)

Construction Materials of Chimney and Chimney Parts	Maximum Temperature Rise Above Room Temperature	
	Column 1 °C	Column 2 °C
Low-carbon steel, cast iron	460	515
Aluminum alloys		
1100 (2S)	185	240
3003 (3S)	240	295
2014, 2017, 2024, 5052[b]	295	350
Aluminum-coated steel, heat-resistant type[c]	570	710
Stainless steel		
Types 302, 303, 304, 321, 347	685	765
Type 316	665	745
Type 309S	865	945
Types 310, 310B	895	975
Type 430	730	810
Type 446	960	1040
Galvanized steel[d]	265	350
Carbon steel - coated with Type A19 ceramic	570	630

[a] The specified maximum temperature rises apply to parts whose failure may cause the chimney to be unsafe for use.

[b] These and other alloys containing more than 1.0 % magnesium are not to be used if the reflectivity of the material is utilized to reduce fire hazard.

[c] When the reflectivity of aluminum-coated steel is utilized to reduce fire hazard, the maximum allowable temperature rise is 460 °C.

[d] The specified maximum temperature rises apply when the galvanizing is required as a protective coating or the reflectivity of the surface is utilized to reduce fire hazard.

NOTE: The inclusion of a temperature limit for a material in Table 4 is not indicative of the acceptability of the material if it does not otherwise conform to these requirements.

TABLE 5
MAXIMUM SURFACE TEMPERATURES OF HANDLES OR KNOBS

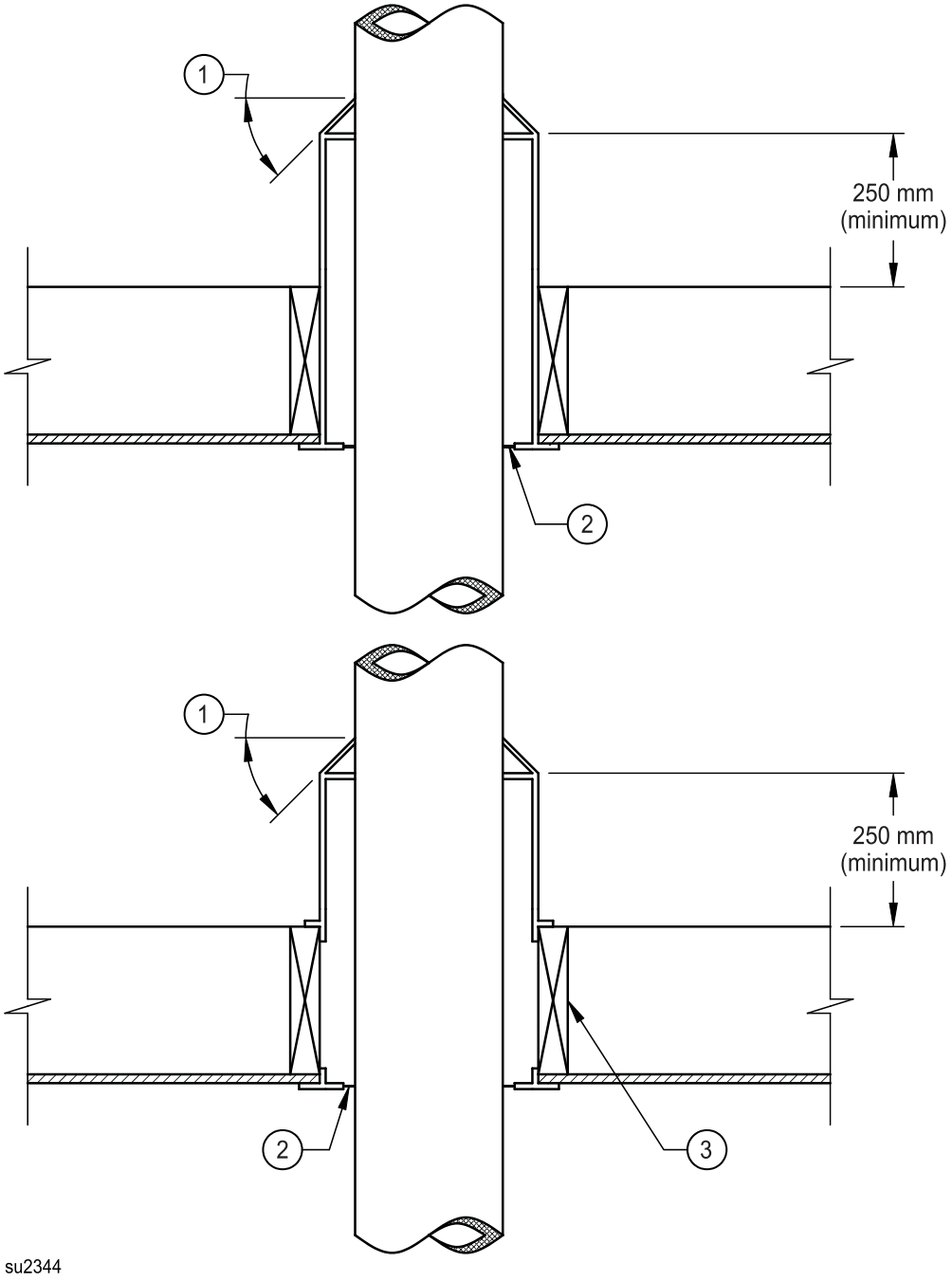
(Reference: Clause 7.7.18)

Material	Temperature (°C)
Metallic	50
Glass	78
Ceramic	85
Plastic	85
Wood	150

FIGURES

FIGURE 1
TYPICAL ATTIC PENETRATION ASSEMBLIES

(Reference: Clause 6.6.1, 6.7.1)

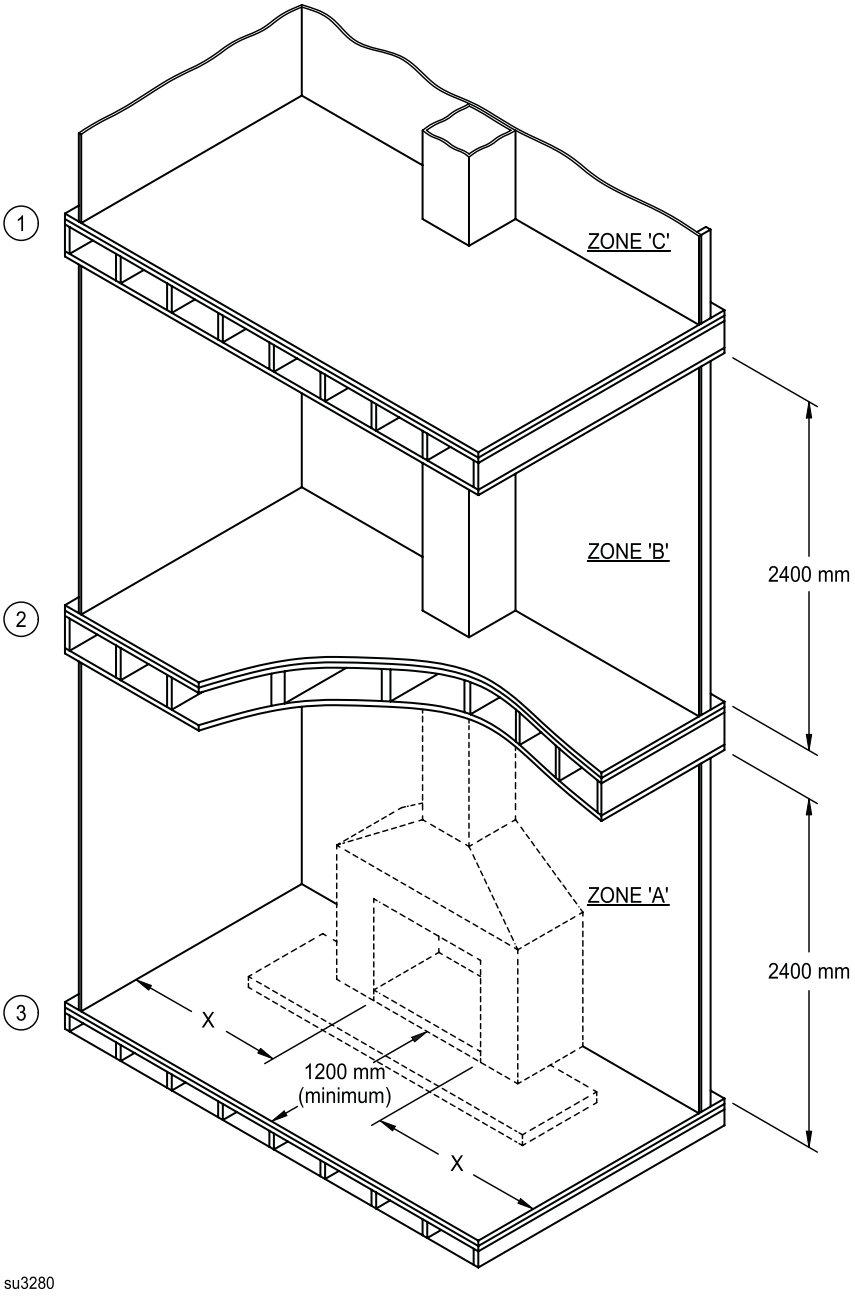


1 Not less than 45°

2 To be sealed at penetration of building envelope

3 Framed on all four sides

FIGURE 2
GENERAL FORM OF TEST STRUCTURE
(Reference: Clause 7.2.1, 7.2.12, 7.3.6)



1 38 x 184 mm joist

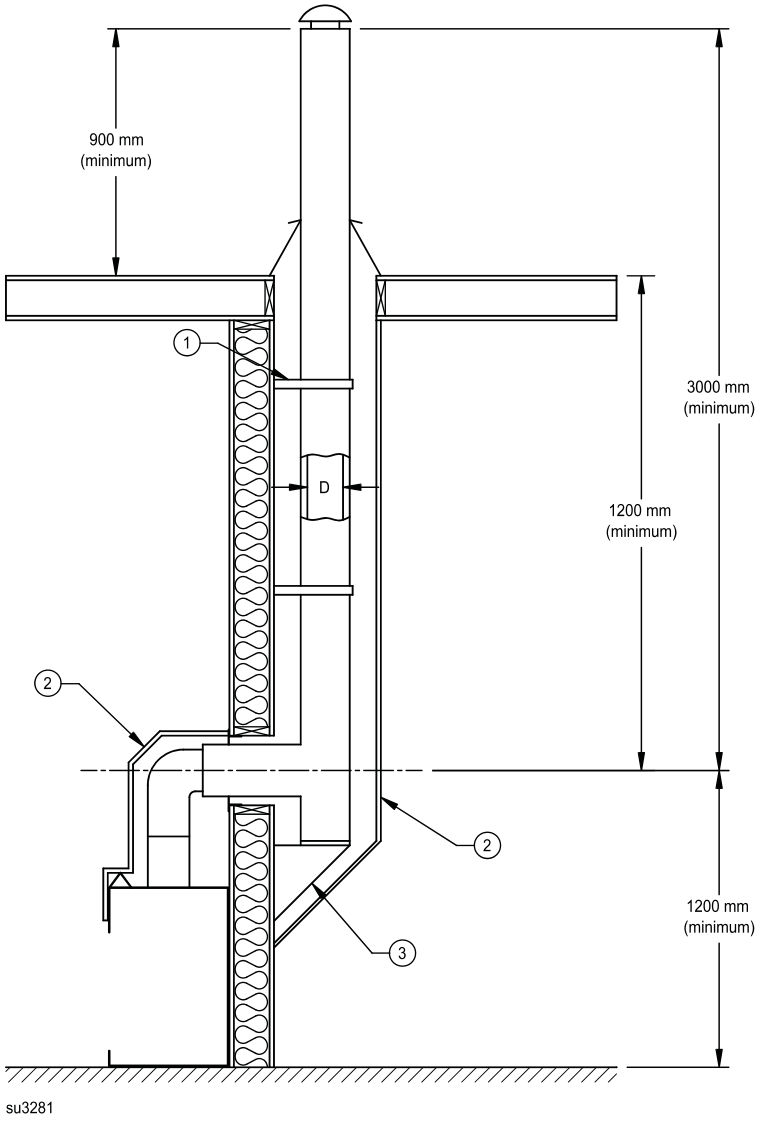
2 38 x 235 mm joist

3 38 x 89 mm joist

X Manufacturer's minimum clearance, but not less than 1200 mm

FIGURE 3
TEST STRUCTURE FOR EXTERIOR THROUGH-THE-WALL INSTALLATION

(Reference: Clause 7.2.2)



1 Wall support

2 18.5 mm plywood enclosure

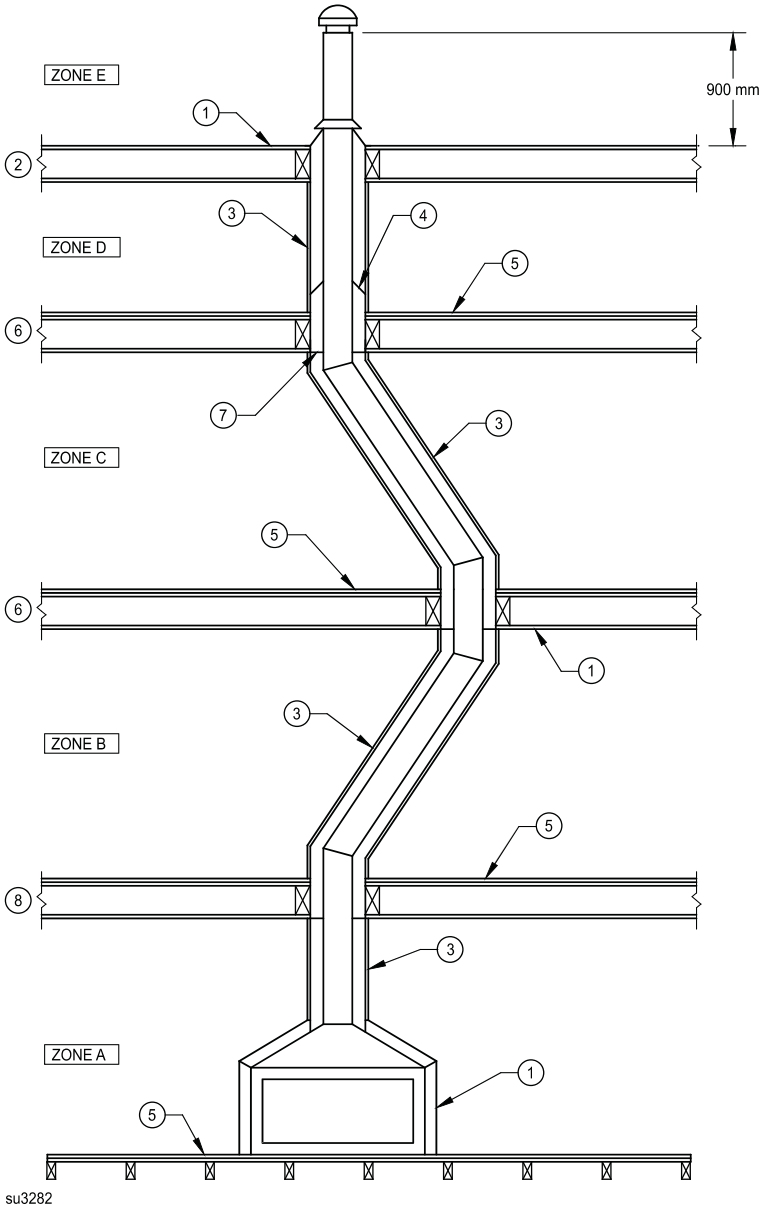
3 Base support

NOTE 1: Wall section to consist of a 1219 mm by 2439 mm panel framed with 38 mm by 184 mm studs, header and plate. Opening to be framed in on all four sides at minimum spacings recommended by the manufacturer and maintained by factory supplied spacers. Panels to be insulated with RSI 4.4 fiberglass and clad with 18.5 mm plywood.

NOTE 2: To be sealed at penetration of building envelope.

FIGURE 4
GENERAL FORM OF TEST STRUCTURE (ELBOWS IN CHIMNEY RUN)

(Reference: Clause 7.2.5)



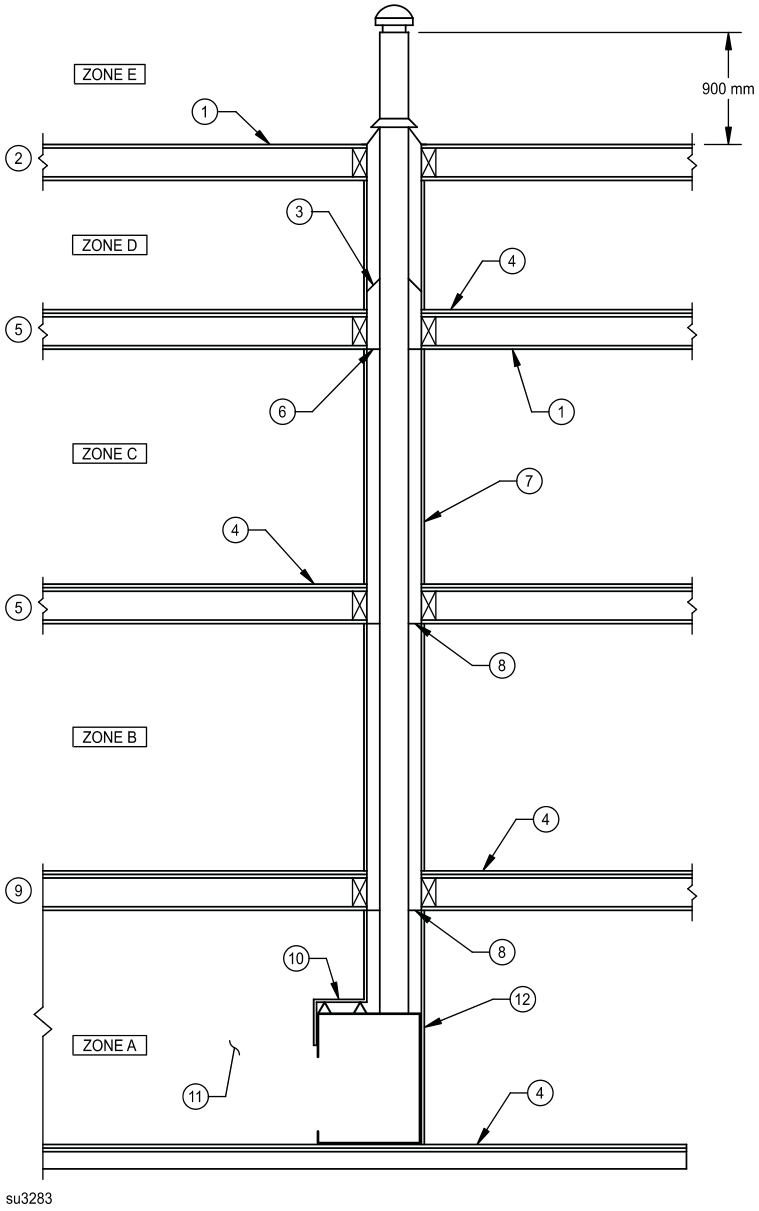
1 18.5 mm plywood
2 38 x 140 mm joist
3 9.5 mm plywood
4 Attic penetration
5 Two layers of 18.5 mm plywood
6 38 x 184 mm joist
7 Attic firestop
8 38 x 235 mm joist

NOTE 1 : To be sealed at penetration of building envelope.

NOTE 2: The number of floors is determined by the height of the assembly to be tested.

FIGURE 5
GENERAL FORM OF TEST STRUCTURE (WITHOUT ELBOWS IN CHIMNEY RUN)

(Reference: Clause 7.2.12, 7.2.15)



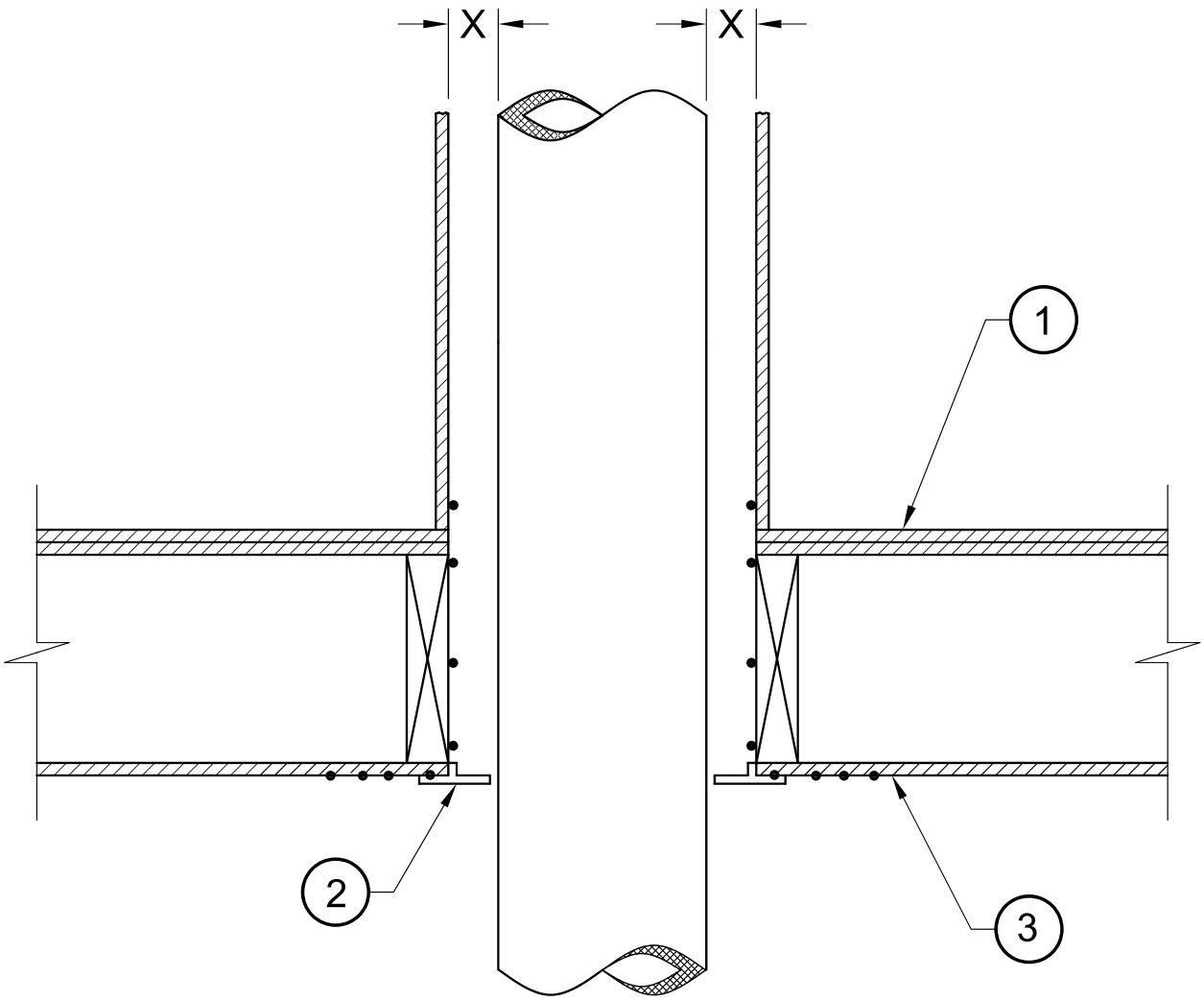
1 18.5 mm plywood
2 38 x 140 mm joist
3 Attic penetration
4 Two layers of 18.5 mm plywood
5 38 x 184 mm joist
6 Attic firestop
7 9.5 mm plywood
8 Firestop
9 38 x 235 mm joist
10 Plywood enclosure for built-in wall type
11 Side wall
12 Back wall

NOTE 1 : To be sealed at penetration of building envelope.

NOTE 2: The number of floors is determined by the height of the assembly to be tested.

FIGURE 6
TEST STRUCTURE DETAILS FOR FIRESTOP-SPACER ASSEMBLY

(Reference: Clause 7.2.19)



su2568

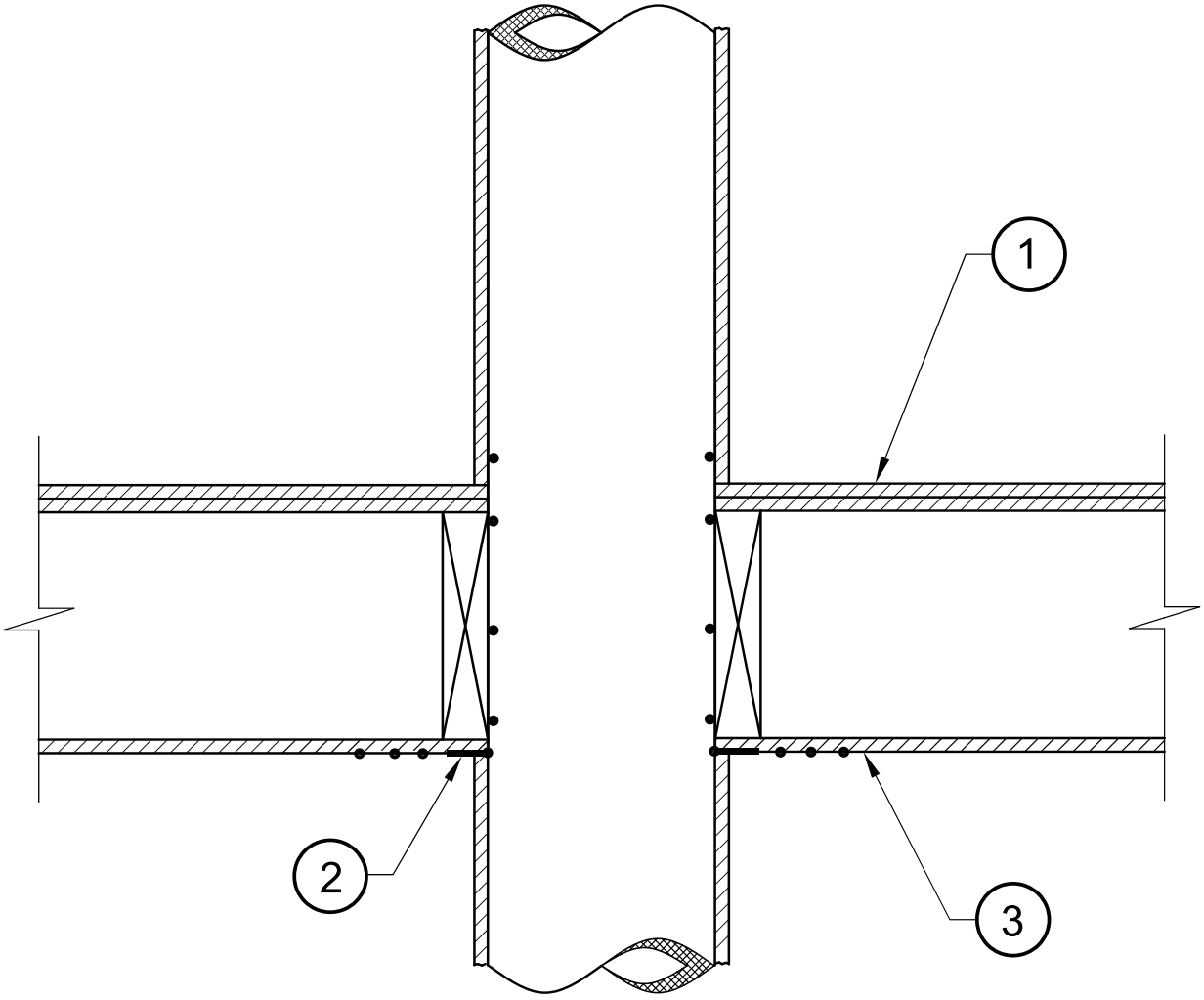
1 19 mm plywood floor and subfloor
2 Factory made firestop-spacer assembly
3 19 mm plywood ceiling

X Specified clearance of enclosure
• Denotes thermocouple location

Joists — Four sides at zero clearance to firestop-spacers

Floor and ceiling material cut flush with inside of joists.

FIGURE 7
TEST STRUCTURE DETAILS FOR FIRESTOP ASSEMBLY (ZERO CLEARANCE)
(Reference: Clause 7.2.19)



su2569

1 19 mm plywood floor and subfloor
2 Factory made firestop assembly
3 19 mm plywood ceiling
• Denotes thermocouple location

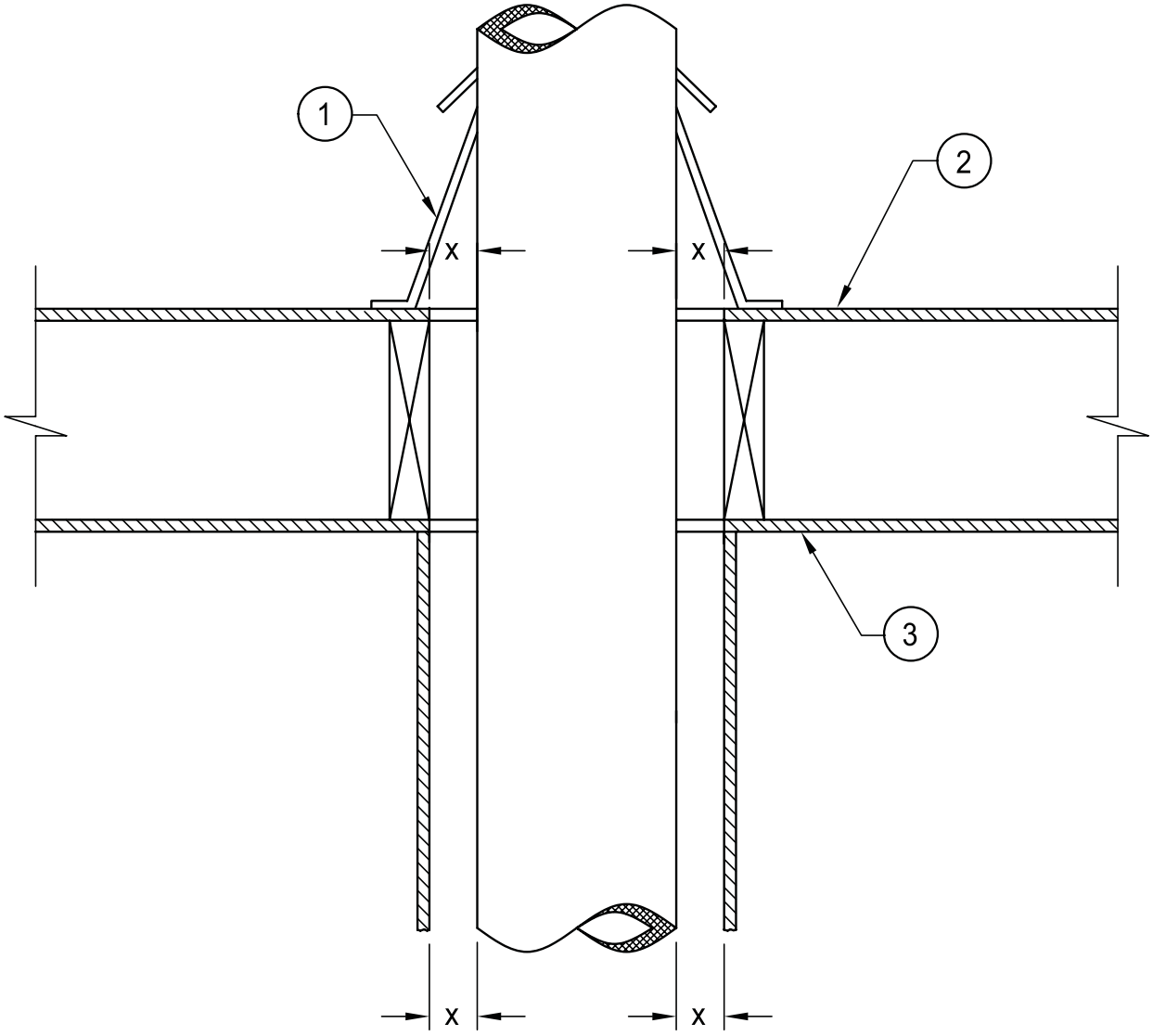
Joists — Four sides at zero clearance to firestop-spacers.

Floor and ceiling material cut flush with inside of joists.

Enclosure shown at zero clearance.

FIGURE 8
TEST STRUCTURE DETAILS FOR ROOF ASSEMBLY (ROOF ASSEMBLY LARGER THAN ENCLOSURE AREA)

(Reference: Clause 7.2.19, 7.2.25)



su2570a

1 Factory-made roof assembly

2 18.5 mm plywood roof

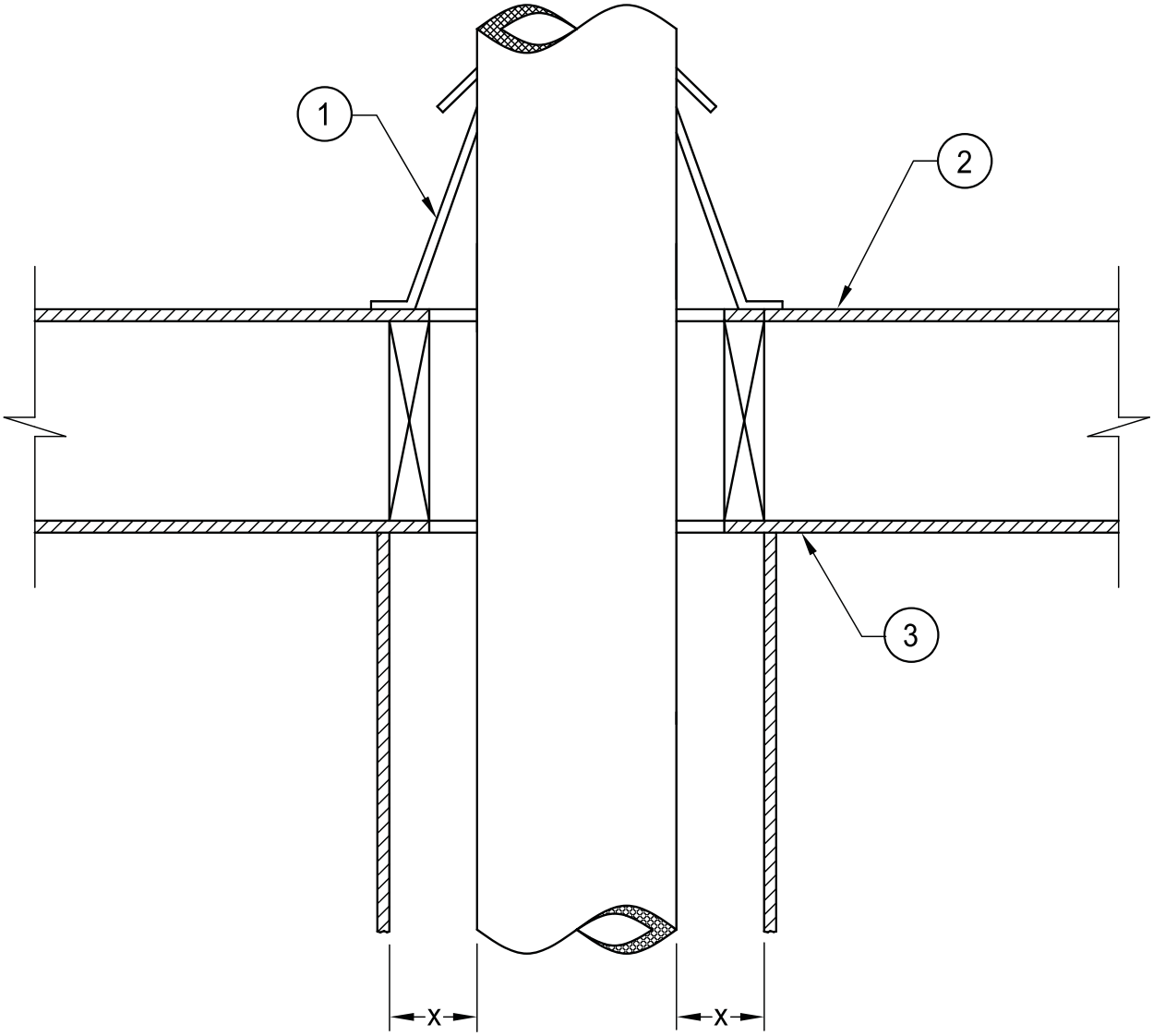
3 18.5 mm plywood ceiling

Joists – Four sides at 'X' (specified clearance to chimney sections)

Floor and ceiling material cut flush with joists

FIGURE 9
TEST STRUCTURE DETAILS FOR ROOF ASSEMBLY (ROOF ASSEMBLY SMALLER THAN ENCLOSURE AREA)

(Reference: Clause 7.2.19, 7.2.25)



su2570b

1 Factory-made roof assembly

2 18.5 mm plywood roof

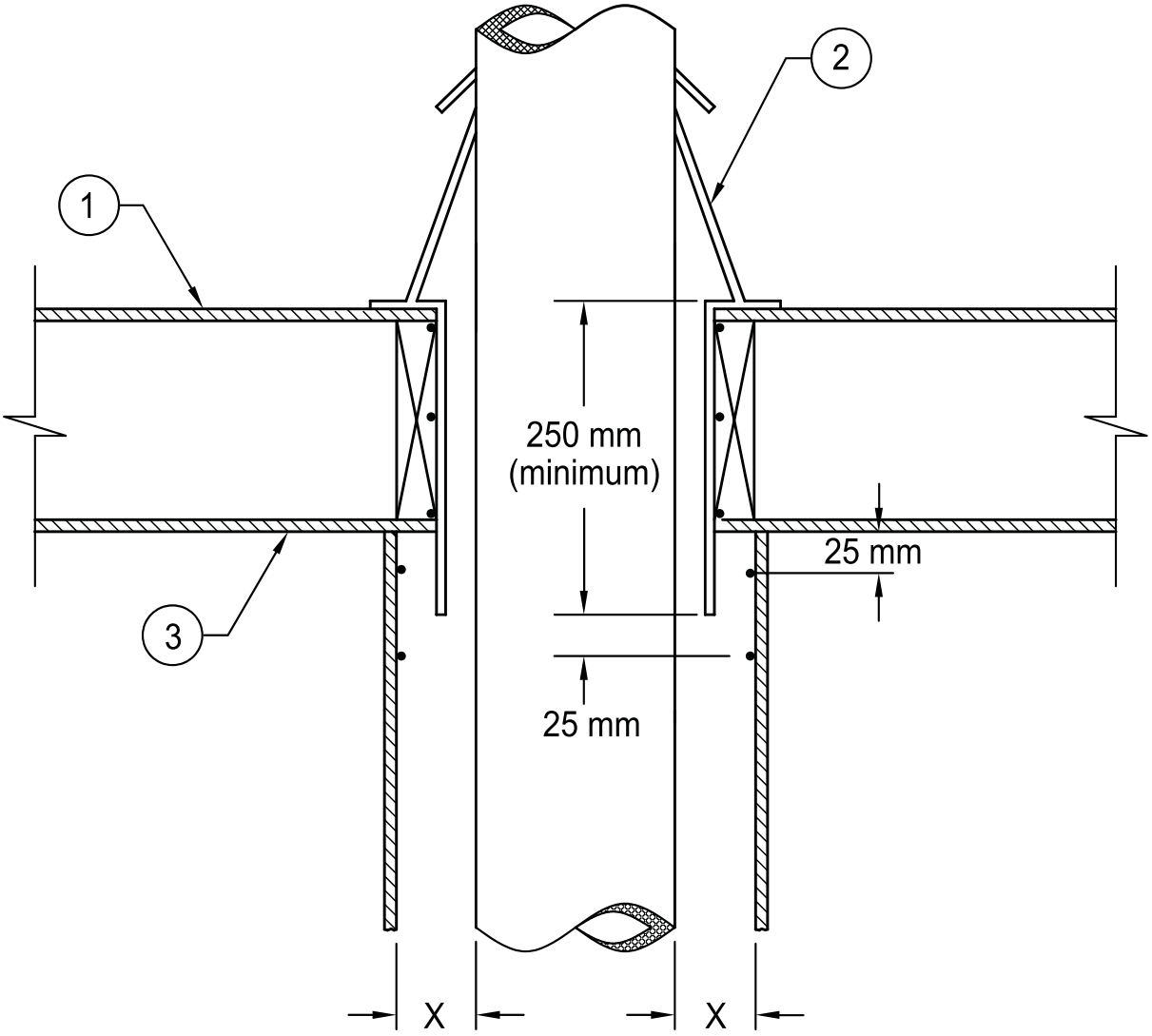
3 18.5 mm plywood ceiling

Joists – Four sides at 'X' (specified clearance to chimney sections)

Floor and ceiling material cut flush with joists

FIGURE 10
TEST STRUCTURE DETAILS FOR ROOF ASSEMBLY (ROOF ASSEMBLY OF TYPE NOT REQUIRING FIELD ALTERATION TO CONFORM TO ROOF LINE)

(Reference: Clause 7.2.19, 7.2.25)



su2571a

1 18.5 mm plywood roof
2 Factory made roof and radiation shield assembly
3 18.5 mm plywood ceiling

• Denotes thermocouple location
X Specified clearance of enclosure

Joists — Four sides at zero clearance to firestop-spacers.

Floor and ceiling material cut flush with inside of joists.

NOTE : To be sealed at penetration of building envelope.