

# REGULATORY INFORMATION REPORT

## FC12454-004 ISSUE 1

**FIRE RESISTANCE OF ABESCO CT120 AND CT240 CABLE AND PIPE TRANSITS**

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# REPORT OBJECTIVE

The purpose of this regulatory information report is to summarise the fire resistance, in accordance with AS 1530.4:2014 and AS 4072.1-2005, of Abesco CT120 and CT240 cable and pipe transits and enclosed penetration services when installed in fire rated elements of construction.

# CONCLUSION

## CT120 Transit systems

It is considered that the Integrity and Insulation of the CT120 cable transit penetration systems shown in Figure 1 to Figure 27 and associated penetration services, as established by test or assessment in accordance with AS 1530.4:2014 and AS 4072.1-2005, would be as detailed in the following tables.

**Integrity of CT120 transit systems**

| System Configuration | Penetrated Element | Integrity (minutes) |
|---|---|---|
| Figures 1 to 5 | Concrete slab at least 150 mm thick | 240 |
| Figures 6 and 8 | Concrete slab at least 120 mm thick | 60 |
| Figures 7 and 9 | Concrete slab at least 150 mm thick | 240 |
| Figures 10 and 11 | Concrete slab at least 150 mm thick | 240 |
| Figures 12 and 13 | Concrete slab at least 150 mm thick | 120 |
| Figure 14 | Concrete slab at least 150 mm thick | 240 |
| Figures 15 to 19 | Concrete or masonry wall at least 150 mm thick | 240 |
| Figures 20 to 24 | Framed fire rated plasterboard lined wall | 120 |
| Figure 25 | Fire rated plasterboard laminated wall | 120 |
| Figures 26 and 27 | Concrete or masonry wall at least 150 mm thick | 240 |

For Figure 6 to Figure 9 and Figure 25 to Figure 27 the installation is deemed to achieve 0 Insulation performance. For the other installations given in the Figures refer to the following table for the Insulation performance**.**



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## Insulation of CT120 transit systems

| Designation | Enclosed service | Insulation (minutes) | | | |
|---|---|---|---|---|---|
| | | PB/concrete Wall | | 150 mm Concrete floor | |
| **Transit configuration** | | **1,2,3** | **6** | **1,2,3** | **6** |
| Cables to EN 13663-3 with 290 mm wide x 5 mm thick Insulwrap | | | | | |
| A1 to A3 | Up to 10 x 1.5 $mm^2$ 2C&E power cables | 120 | 90 | 240 | 240 |
| B | Up to two single core 95 $mm^2$ power cables | 120 | 90 | 180 | 180 |
| C1 | Single 4 Core 95 $mm^2$ PVC sheathed power cable | 120 | 90 | 120 | 120 |
| C2 | Single 4 Core 95 $mm^2$ PVC sheathed power cable | 120 | 90 | 120 | 120 |
| C3 | Single 4 Core 95 $mm^2$ PVC sheathed power cable | 120 | 90 | 90 | 90 |
| D1 | Single 4 core 185 $mm^2$ power cable | 120 | 90 | 90 | 90 |
| D2 | Single 4 core 185 $mm^2$ power cable | 120 | 90 | 180 | 180 |
| D3 | Single 4 core 185 $mm^2$ power cable | 120 | 90 | 120 | 120 |
| E | Up to two single core 185 $mm^2$ PVC power cables | 120 | 90 | 90 | 90 |
| F | 100 mm dia. bundle of screened telecom cables PE sheathed | 90 | 90 | 180 | 90 |
| G1 | One single core 95 $mm^2$ PVC insulated unsheathed power cable | 60 | 60 | 60 | 60 |
| G2 | One single core 185 $mm^2$ PVC insulated unsheathed power cable | 60 | 60 | 60 | 60 |
| **Cables to AS 1530.4** | | | | | |
| D1 (a) | One single core 630 $mm^2$ PVC sheathed power cable | 30 | - | 60 | - |
| D1 (b) | One 185 $mm^2$ 3C&E PVC sheathed power cable | 30 | - | 60 | - |
| D1 (c) | Three 6 $mm^2$ 3C&E PVC sheathed power cable | 30 | - | 60 | - |
| D1 (d) | Eight 16 $mm^2$ 3C&E PVC sheathed power cable | 30 | - | 60 | - |
| **Other cables** | | | | | |
| | Up to 120 x Cat 6, 8 core com. Cables | 60 | - | 120 | - |
| | Up to 120 x Cat 5e 8 core com. cables | 60 | - | 120 | - |
| | Up to 25 RG6 coaxial cables | 60 | - | 120 | - |
| | Up to 17 x 6 $mm^2$ 2C&E TPS power cable | 60 | - | 60 | - |
| **Blank Transits** | | | | | |
| | 64 mm CT120 | 60* | 60* | 120 | 120 |
| | 102 mm CT120 | 0* | 0 | 0# | 0# |
| | 50 mm CTR | 60 | NA | 120 | NA |
| | 100 mm CTR | 0 | NA | 0 | NA |
| | 150 mm CTR | 0 | NA | 0 | NA |



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* Transit covered with 5 mm thick Insulwrap Insulation increased to 120 minutes.
# Transit covered with 5 mm thick Insulwrap Insulation increased to 90 minutes.

The fire rated plasterboard wall (PB) in the above table shall be minimum of two layers of 13 mm fire rated plasterboard each side of a 64 mm deep steel stud and have achieved a fire resistance rating of at least -/120/120. The results for the plasterboard wall can also be applied to an equivalent thickness fire rated concrete wall.

In the above table where 5 mm thick Insulwrap is part of the protection system the transit body where it exits the element is to be protected with the Insulwrap and the penetration for the length defined in the table.

## CT240 transit systems

It is also considered that the Integrity and Insulation of the CT240 cable and pipe transit penetration systems shown in Figure 2, Figure 10, Figure 16 and Figure 21 and associated penetration services, as established by test or assessment in accordance with AS 1530.4:2014 and AS 4072.1-2005, would be as detailed in the following tables.

**Integrity of CT240 transit systems**

| Penetrated Element | Penetrations | Integrity (minutes) |
|---|---|---|
| Steel framed plasterboard lined wall at least 100 mm thick | Power or communication cables | 120 |
| AAC or concrete or masonry wall at least 150 mm thick | Power or communication cables | 120 |
| Concrete floor at least 150 mm thick | Power or communication cables | 120 |
| AAC or concrete or masonry wall at least 100 mm thick | Copper or steel pipes with K-flex pipe insulation continuous through the transit | 240 |
| AAC or concrete floor at least 150 mm thick | Copper or steel pipes with K-flex pipe insulation continuous through the transit | 240 |



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**Insulation of CT240 transits with cables to EN 13663-3 with 300 mm wide x 5 mm thick Insulwrap**

| Designation | Enclosed service | Insulation (minutes) | |
|---|---|---|---|
| | | PB/concrete Wall | Concrete floor |
| **Cables to EN 13663-3 with 300 mm wide x 5 mm thick Insulwrap** | | | |
| A1 to A3 | Up to 10 x 1.5 $mm^2$ 2C&E power cables | 120 | 120 |
| B | Up to two single core 95 $mm^2$ power cables | 120 | 60 |
| C1 | Single 4 Core 95 $mm^2$ PVC sheathed power cable | 90 | 60 |
| C2 | Single 4 Core 95 $mm^2$ PVC sheathed power cable | 90 | 120 |
| C3 | Single 4 Core 95 $mm^2$ PVC sheathed power cable | 90 | 120 |
| D1 | Single 4 core 185 $mm^2$ power cable | 90 | 120 |
| D2 & D3 | Single 4 core 185 $mm^2$ power cable | 120 | 120 |
| E | Up to two single core 185 $mm^2$ PVC power cables | 120 | 90 |
| F | Bundle of screened telecom cables PE sheathed | 120 | 120 |
| G1 | One single core 95 $mm^2$ PVC insulated unsheathed power cable | 120 | 90 |
| G2 | One single core 185 $mm^2$ PVC insulated unsheathed power cable | 120 | - |

**Insulation of CT240 transits with K-flex insulated pipes**

| Designation | Enclosed service | Insulation (minutes) | |
|---|---|---|---|
| | | Concrete Wall | 150 mm Concrete floor |
| **Pipes** | | | |
| Copper | 10 mm dia. with at least 6 mm thick K-flex | 60 | 60 |
| | 28 mm dia. with at least 9 mm thick K-flex | 60 | 60 |
| | 42 mm dia. with at least 13 mm thick K-flex | 90 | 60 |
| | 42 mm dia. with at least 40 mm thick K-flex | 90 | 60 |
| Steel | 10 mm dia. with at least 6 mm thick K-flex | 90 | 60 |
| | 10 mm dia. with at least 19 mm thick K-flex | 90 | 60 |
| | 25 mm dia. with at least 9 mm thick K-flex | 60 | 60 |
| | 25 mm dia. with at least 25 mm thick K-flex | 90 | 60 |
| | 40 mm dia. with at least 13 mm thick K-flex | 90 | 60 |
| | 40 mm dia. with at least 40 mm thick K-flex | 90 | 60 |
| | 63.5 mm dia. with at least 9 mm thick K-flex | 60 | 60 |
| | 63.5 mm dia. with at least 32 mm thick K-flex | 90 | 60 |
| | 88.9 mm dia. with at least 13 mm thick K-flex | 90 | 60 |



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BRANZ reserves the right to amend or withdraw this assessment if information becomes available which indicates the stated fire performance may not be achieved.

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# TABLES





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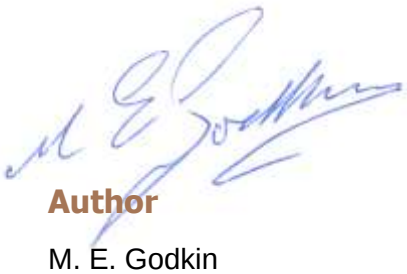
# SIGNATORIES



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# 1. INTRODUCTION

This report gives BRANZ's summary of the fire resistance performance of the Abesco CT120 and CT240 cable and pipe transits, if tested in accordance with AS 1530.4:2014 and AS 4072.1-2005.

For the installation details for the CT120 cable and pipe transits refer to Figure 1 to Figure 27. For the installation details for the CT240 cable and pipe transits refer to Figure 2, Figure 10, Figure 16 and Figure 21.

# 2. BACKGROUND

BRANZ fire assessment report FC12454-003 provides details of the fire resistance and supporting test evidence for the Abesco CT120 and CT240 cable and pipe transits. This document provides a summary of that report.

# 3. CONCLUSION

## 3.1 CT120 Pipe and cable transits

It is considered that the Integrity and Insulation of the CT120 cable transit penetration systems shown in Figure 1 to Figure 27 and associated penetration services, as established by test or assessment in accordance with AS 1530.4:2014 and AS 4072.1-2005, would be as detailed in Table 1 for the Integrity performance and Table 2 for the Insulation performance**.**

For Figure 6 to Figure 9 and Figure 25 to Figure 27 the installation is deemed to achieve 0 Insulation performance. For the other installations given in the Figures refer to Table 2 for the Insulation performance**.**

**Table 1: Integrity of CT120 transit systems**

| System Configuration | Penetrated Element | Integrity (minutes) |
|---|---|---|
| Figures 1 to 5 | Concrete slab at least 150 mm thick | 240 |
| Figures 6 and 8 | Concrete slab at least 120 mm thick | 60 |
| Figures 7 and 9 | Concrete slab at least 150 mm thick | 240 |
| Figures 10 and 11 | Concrete slab at least 150 mm thick | 240 |
| Figures 12 and 13 | Concrete slab at least 150 mm thick | 120 |
| Figure 14 | Concrete slab at least 150 mm thick | 240 |
| Figures 15 to 19 | Concrete or masonry wall at least 150 mm thick | 240 |
| Figures 20 to 24 | Framed fire rated plasterboard lined wall | 120 |
| Figure 25 | Fire rated plasterboard laminated wall | 120 |
| Figures 26 and 27 | Concrete or masonry wall at least 150 mm thick | 240 |





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**Table 2: Insulation of CT120 transit systems**

| Designation | Enclosed service | Insulation (minutes) | | | |
|---|---|---|---|---|---|
| | | PB/concrete Wall | | 150 mm Concrete floor | |
| **Transit configuration** | | **1,2,3** | **6** | **1,2,3** | **6** |
| Cables to EN 13663-3 with 290 mm wide x 5 mm thick Insulwrap | | | | | |
| A1 to A3 | Up to 10 x 1.5 $mm^2$ 2C&E power cables | 120 | 90 | 240 | 240 |
| B | Up to two single core 95 $mm^2$ power cables | 120 | 90 | 180 | 180 |
| C1 | Single 4 Core 95 $mm^2$ PVC sheathed power cable | 120 | 90 | 120 | 120 |
| C2 | Single 4 Core 95 $mm^2$ PVC sheathed power cable | 120 | 90 | 120 | 120 |
| C3 | Single 4 Core 95 $mm^2$ PVC sheathed power cable | 120 | 90 | 90 | 90 |
| D1 | Single 4 core 185 $mm^2$ power cable | 120 | 90 | 90 | 90 |
| D2 | Single 4 core 185 $mm^2$ power cable | 120 | 90 | 180 | 180 |
| D3 | Single 4 core 185 $mm^2$ power cable | 120 | 90 | 120 | 120 |
| E | Up to two single core 185 $mm^2$ PVC power cables | 120 | 90 | 90 | 90 |
| F | 100 mm dia. bundle of screened telecom cables PE sheathed | 90 | 90 | 180 | 90 |
| G1 | One single core 95 $mm^2$ PVC insulated unsheathed power cable | 60 | 60 | 60 | 60 |
| G2 | One single core 185 $mm^2$ PVC insulated unsheathed power cable | 60 | 60 | 60 | 60 |
| **Cables to AS 1530.4** | | | | | |
| D1 (a) | One single core 630 $mm^2$ PVC sheathed power cable | 30 | - | 60 | - |
| D1 (b) | One 185 $mm^2$ 3C&E PVC sheathed power cable | 30 | - | 60 | - |
| D1 (c) | Three 6 $mm^2$ 3C&E PVC sheathed power cable | 30 | - | 60 | - |
| D1 (d) | Eight 16 $mm^2$ 3C&E PVC sheathed power cable | 30 | - | 60 | - |
| **Other cables** | | | | | |
| | Up to 120 x Cat 6, 8 core com. Cables | 60 | - | 120 | - |
| | Up to 120 x Cat 5e 8 core com. cables | 60 | - | 120 | - |
| | Up to 25 RG6 coaxial cables | 60 | - | 120 | - |
| | Up to 17 x 6 $mm^2$ 2C&E TPS power cable | 60 | - | 60 | - |
| **Blank Transits** | | | | | |
| | 64 mm CT120 | 60* | 60* | 120 | 120 |
| | 102 mm CT120 | 0* | 0 | 0# | 0# |
| | 50 mm CTR | 60 | NA | 120 | NA |
| | 100 mm CTR | 0 | NA | 0 | NA |
| | 150 mm CTR | 0 | NA | 0 | NA |



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* Transit covered with 5 mm thick Insulwrap Insulation increased to 120 minutes.
# Transit covered with 5 mm thick Insulwrap Insulation increased to 90 minutes.

The fire rated plasterboard wall (PB) in the above table shall be minimum of two layers of 13 mm fire rated plasterboard each side of a 64 mm deep steel stud and have achieved a fire resistance rating of at least -/120/120. The results for the plasterboard wall can also be applied to an equivalent thickness fire rated concrete wall.

In the above table where 5 mm thick Insulwrap is part of the protection system the transit body where it exits the element is to be protected with the Insulwrap and the penetration for the length defined in the table.

## 3.2 CT240 Pipe and cable transits

It is also considered that the Integrity and Insulation of the CT240 cable and pipe transit penetration systems shown in Figure 2, Figure 10, Figure 16 and Figure 21 and associated penetration services, as established by test or assessment in accordance with AS 1530.4:2014 and AS 4072.1-2005, would be as given in Table 3 for the Integrity performance and Table 4 and Table 5 for the Insulation performance.

**Table 3: Integrity of CT240 transit systems**

| Penetrated Element | Penetrations | Integrity (minutes) |
|---|---|---|
| Steel framed plasterboard lined wall at least 100 mm thick | Power or communication cables | 120 |
| AAC or concrete or masonry wall at least 150 mm thick | Power or communication cables | 120 |
| Concrete floor at least 150 mm thick | Power or communication cables | 120 |
| AAC or concrete or masonry wall at least 100 mm thick | Copper or steel pipes with K-flex pipe insulation continuous through the transit | 240 |
| AAC or concrete floor at least 150 mm thick | Copper or steel pipes with K-flex pipe insulation continuous through the transit | 240 |



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**Table 4: Insulation of CT240 transits with cables to EN 13663-3 with 300 mm wide x 5 mm thick Insulwrap**

| Designation | Enclosed service | Insulation (minutes) | |
|---|---|---|---|
| | | PB/concrete Wall | Concrete floor |
| **Cables to EN 13663-3 with 300 mm wide x 5 mm thick Insulwrap** | | | |
| A1 to A3 | Up to 10 x 1.5 $mm^2$ 2C&E power cables | 120 | 120 |
| B | Up to two single core 95 $mm^2$ power cables | 120 | 60 |
| C1 | Single 4 Core 95 $mm^2$ PVC sheathed power cable | 90 | 60 |
| C2 | Single 4 Core 95 $mm^2$ PVC sheathed power cable | 90 | 120 |
| C3 | Single 4 Core 95 $mm^2$ PVC sheathed power cable | 90 | 120 |
| D1 | Single 4 core 185 $mm^2$ power cable | 90 | 120 |
| D2 & D3 | Single 4 core 185 $mm^2$ power cable | 120 | 120 |
| E | Up to two single core 185 $mm^2$ PVC power cables | 120 | 90 |
| F | Bundle of screened telecom cables PE sheathed | 120 | 120 |
| G1 | One single core 95 $mm^2$ PVC insulated unsheathed power cable | 120 | 90 |
| G2 | One single core 185 $mm^2$ PVC insulated unsheathed power cable | 120 | - |

**Table 5: Insulation of CT240 transits with K-flex insulated pipes**

| Designation | Enclosed service | Insulation (minutes) | |
|---|---|---|---|
| | | Concrete Wall | 150 mm Concrete floor |
| **Pipes** | | | |
| Copper | 10 mm dia. with at least 6 mm thick K-flex | 60 | 60 |
| | 28 mm dia. with at least 9 mm thick K-flex | 60 | 60 |
| | 42 mm dia. with at least 13 mm thick K-flex | 90 | 60 |
| | 42 mm dia. with at least 40 mm thick K-flex | 90 | 60 |
| Steel | 10 mm dia. with at least 6 mm thick K-flex | 90 | 60 |
| | 10 mm dia. with at least 19 mm thick K-flex | 90 | 60 |
| | 25 mm dia. with at least 9 mm thick K-flex | 60 | 60 |
| | 25 mm dia. with at least 25 mm thick K-flex | 90 | 60 |
| | 40 mm dia. with at least 13 mm thick K-flex | 90 | 60 |
| | 40 mm dia. with at least 40 mm thick K-flex | 90 | 60 |
| | 63.5 mm dia. with at least 9 mm thick K-flex | 60 | 60 |
| | 63.5 mm dia. with at least 32 mm thick K-flex | 90 | 60 |
| | 88.9 mm dia. with at least 13 mm thick K-flex | 90 | 60 |



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**Figure 1: Drawing No. F-CIR-001 – CT120 Floor seal with CT mounting flanges and Abesco fire sealant**

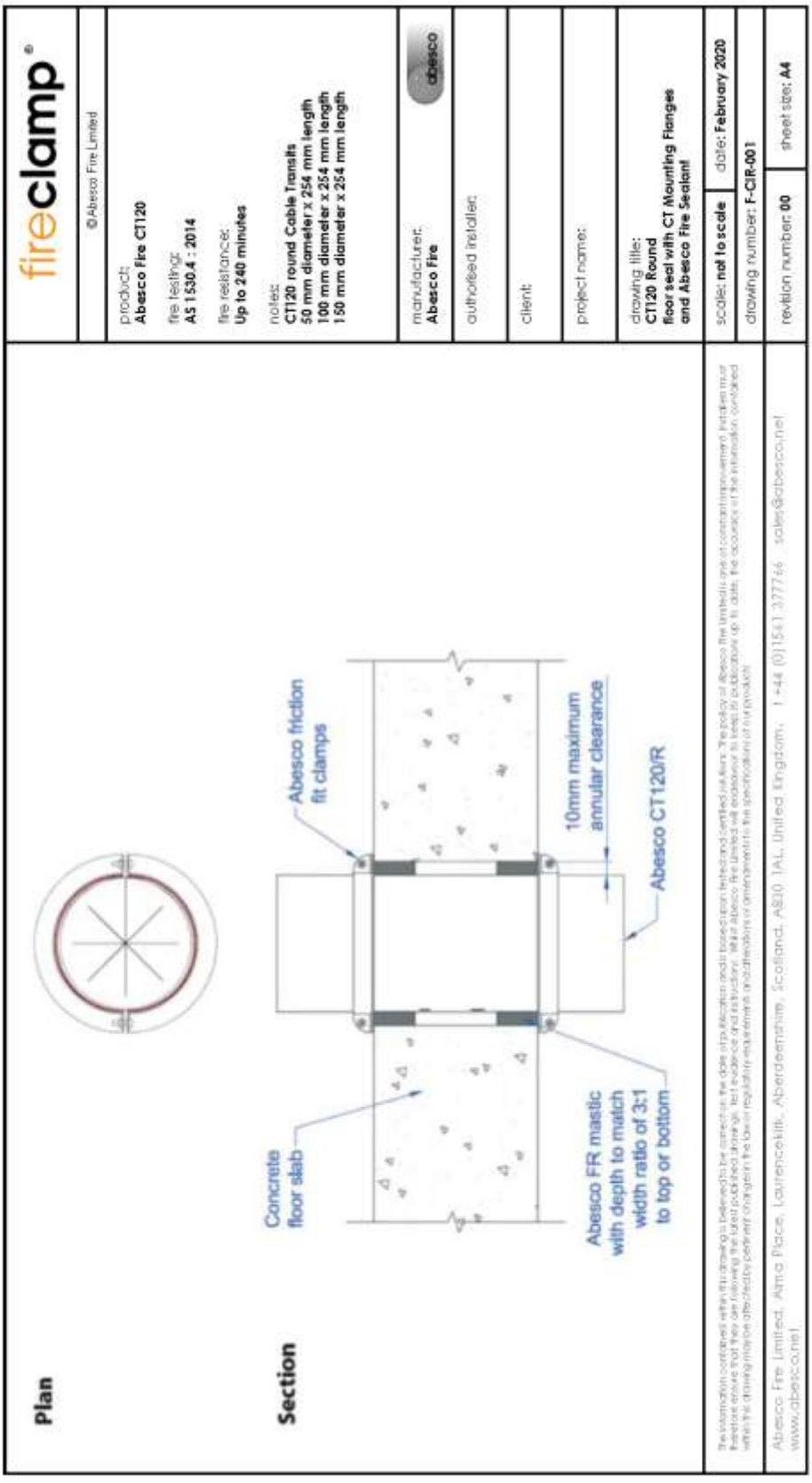

**Figure 2: Drawing No. F-RECT-1-002 – CT120 Floor seal with CT mounting flanges and Abesco fire sealant**

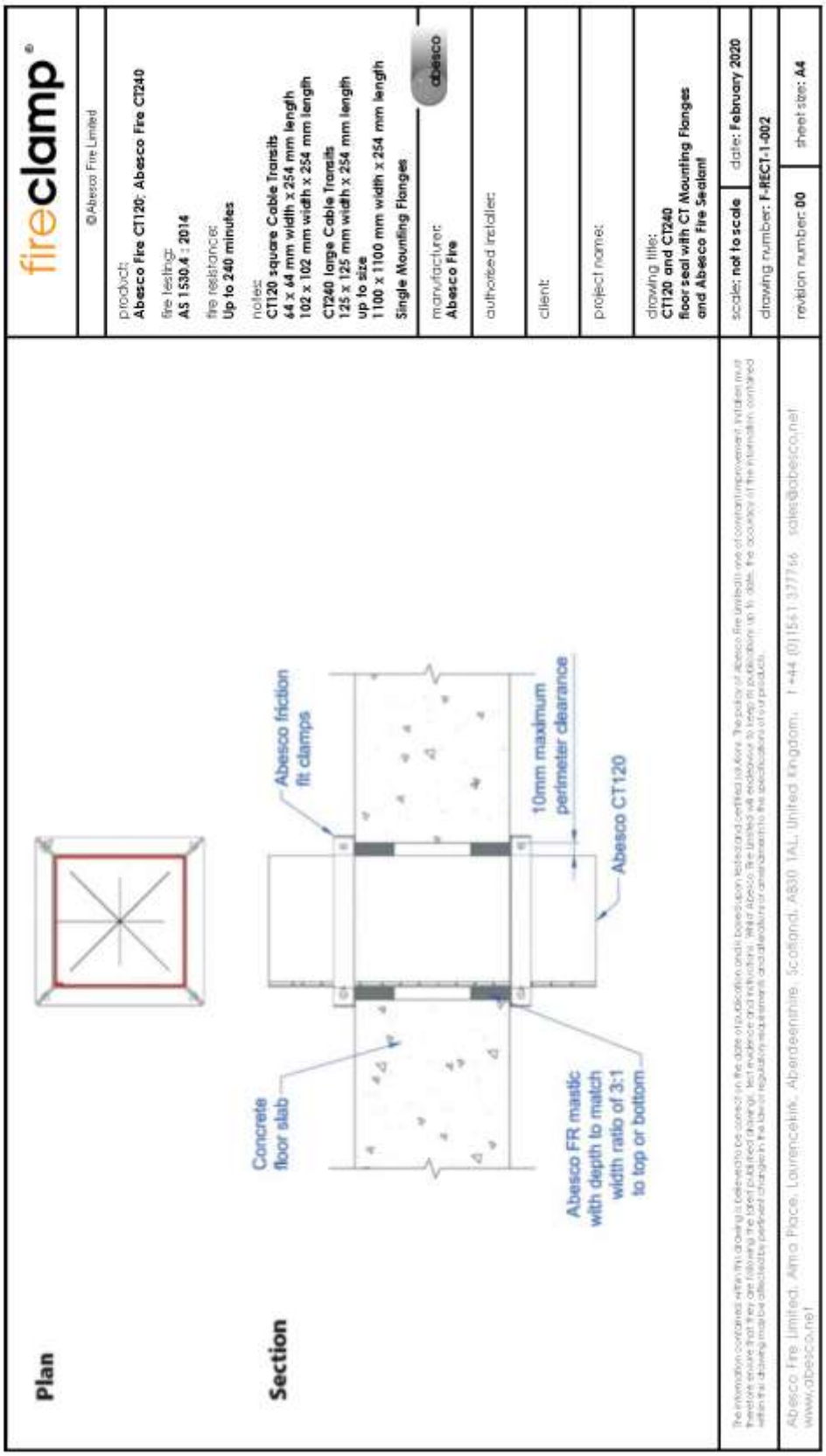

**Figure 3: Drawing No. F-RECT-2-003 – CT120 Duplex floor seal with CT mounting flanges and Abesco fire sealant**

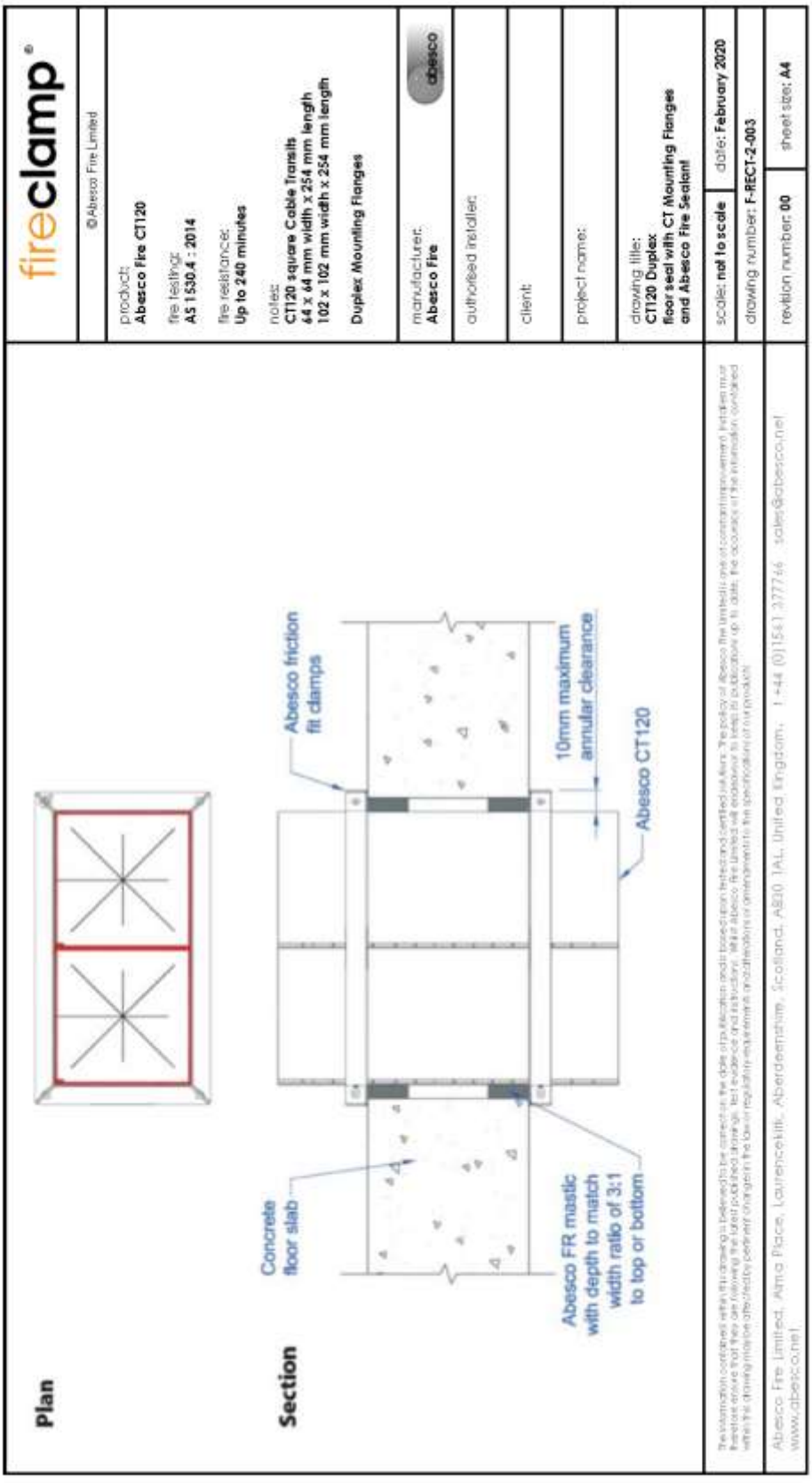

**Figure 4: Drawing No. F-RECT-3-004 – CT120 Triplex floor seal with CT mounting flanges and Abesco fire sealant**

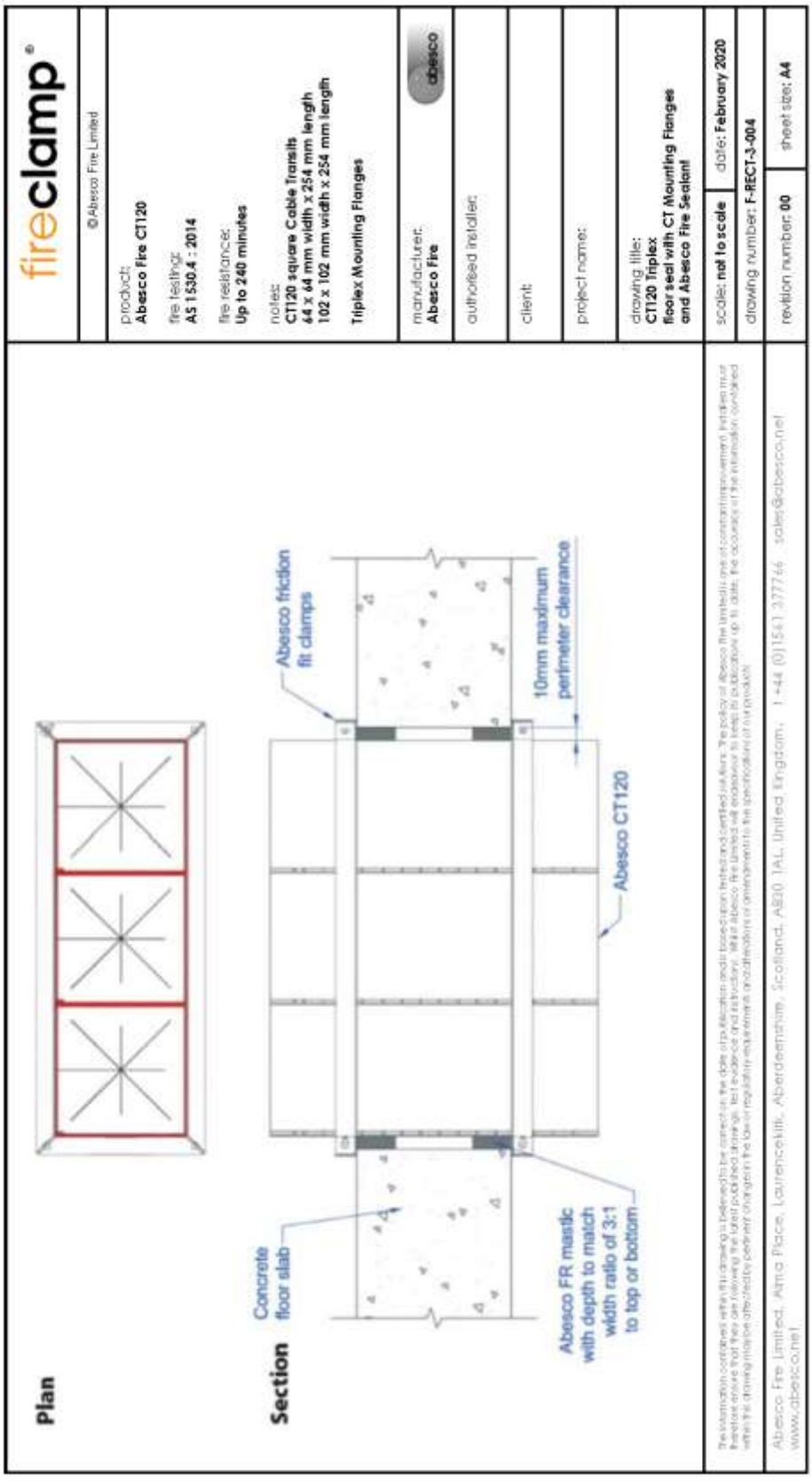

**Figure 5: Drawing No. F-RECT-6-005 – CT120 Sixplex floor seal with CT mounting flanges and Abesco fire sealant**

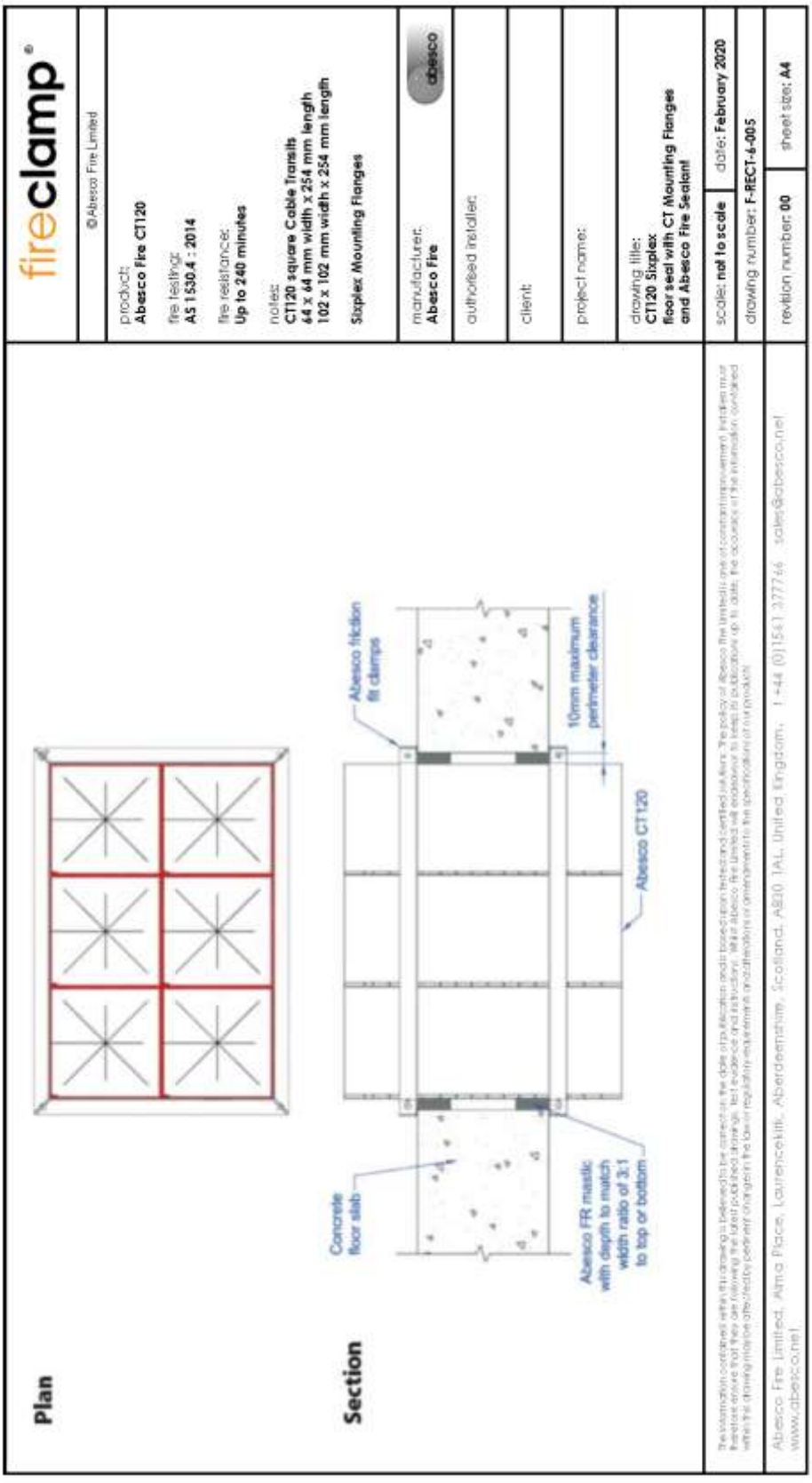

**Figure 6: Drawing No. F-RECT-1-006 – CT120 Floor seal with CT angle tab mounting and Abesco fire sealant top side**

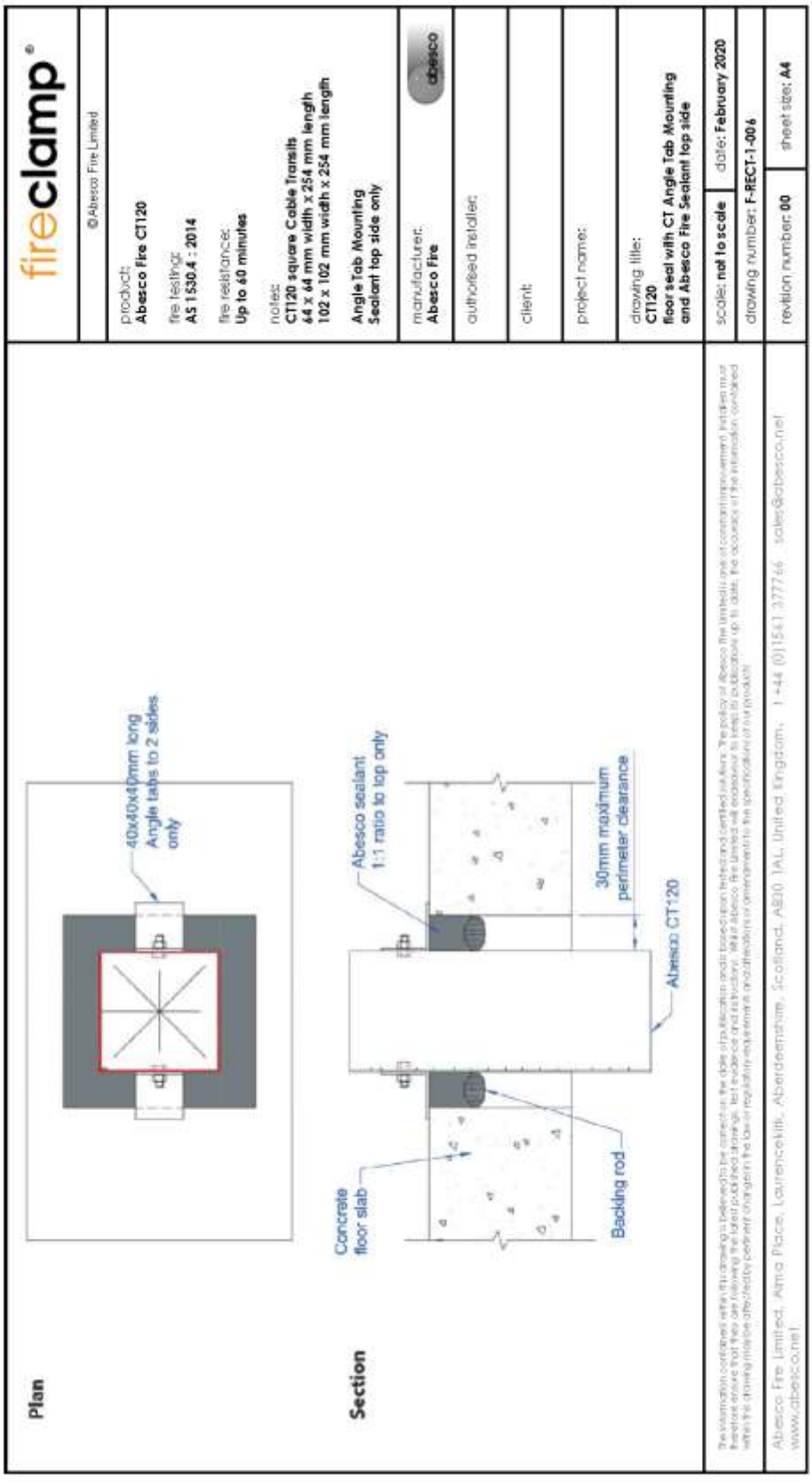

**Figure 7: Drawing No. F-RECT-1-007 – CT120 Floor seal with CT angle tab mounting and Abesco fire sealant both sides**

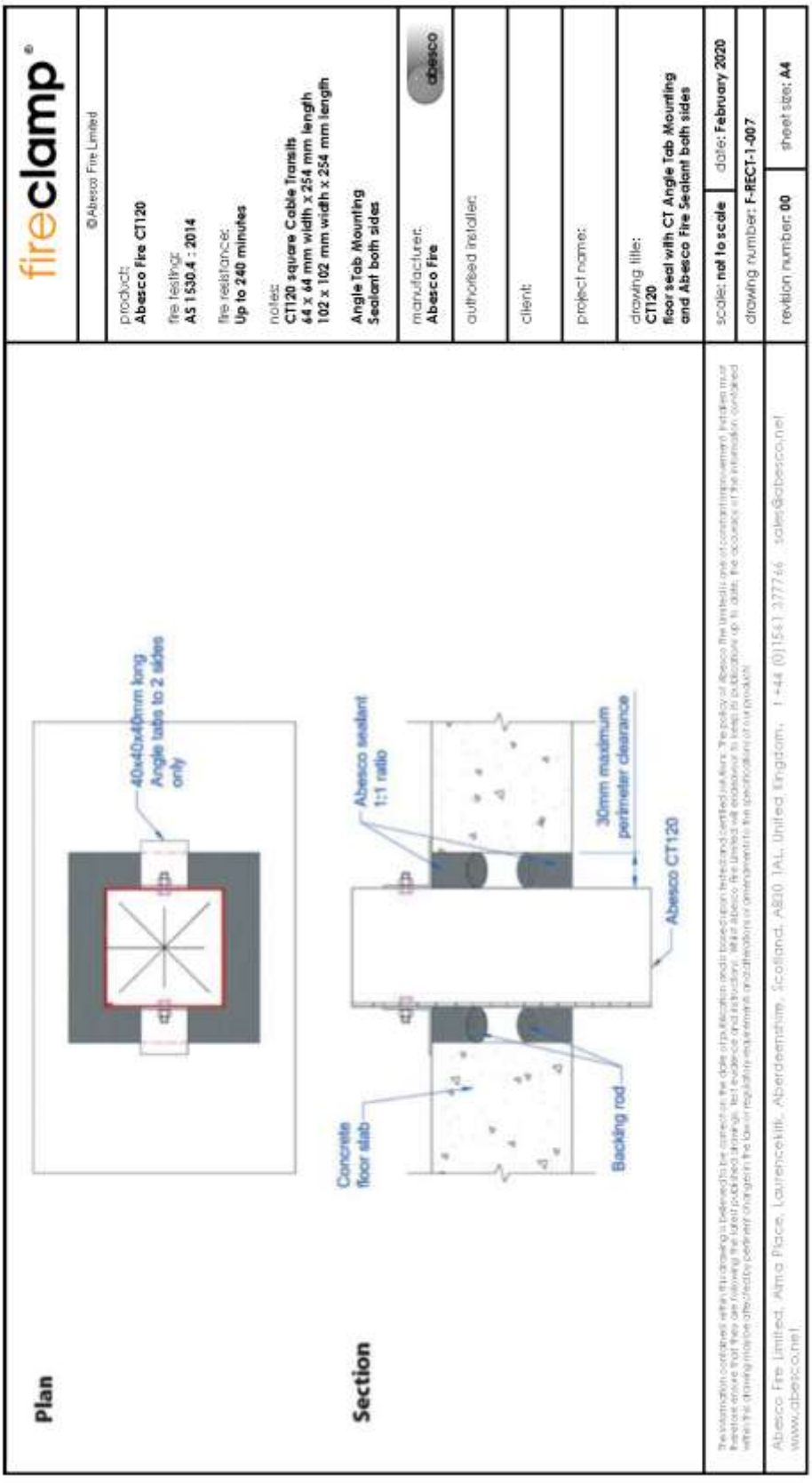

**Figure 8: Drawing No. F-CIR-008 – CT120/R Floor seal with CT angle tab mounting and Abesco fire sealant top side**

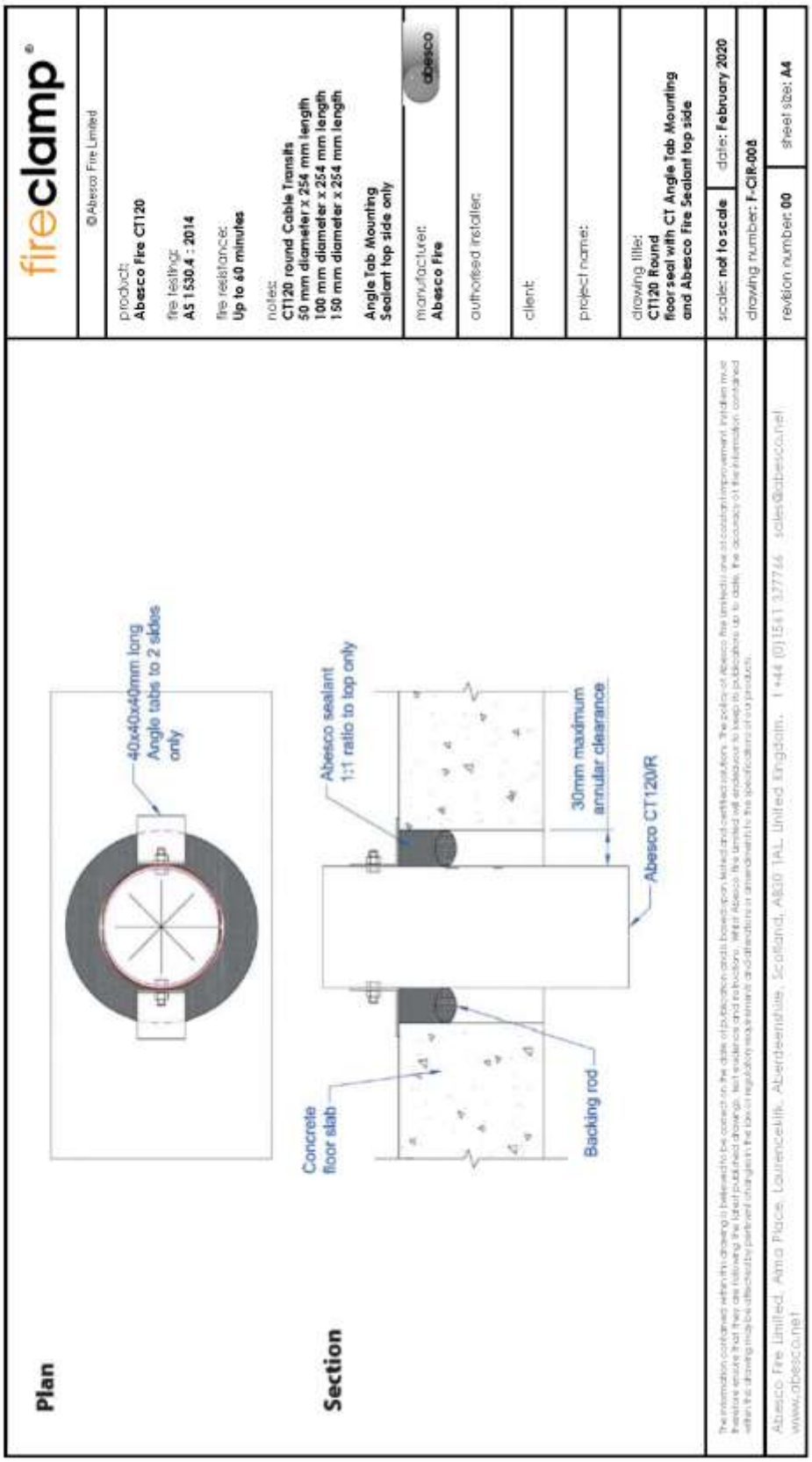

**Figure 9: Drawing No. F-CIR-009 – CT120/R Floor seal with CT angle tab mounting and Abesco fire sealant both sides**

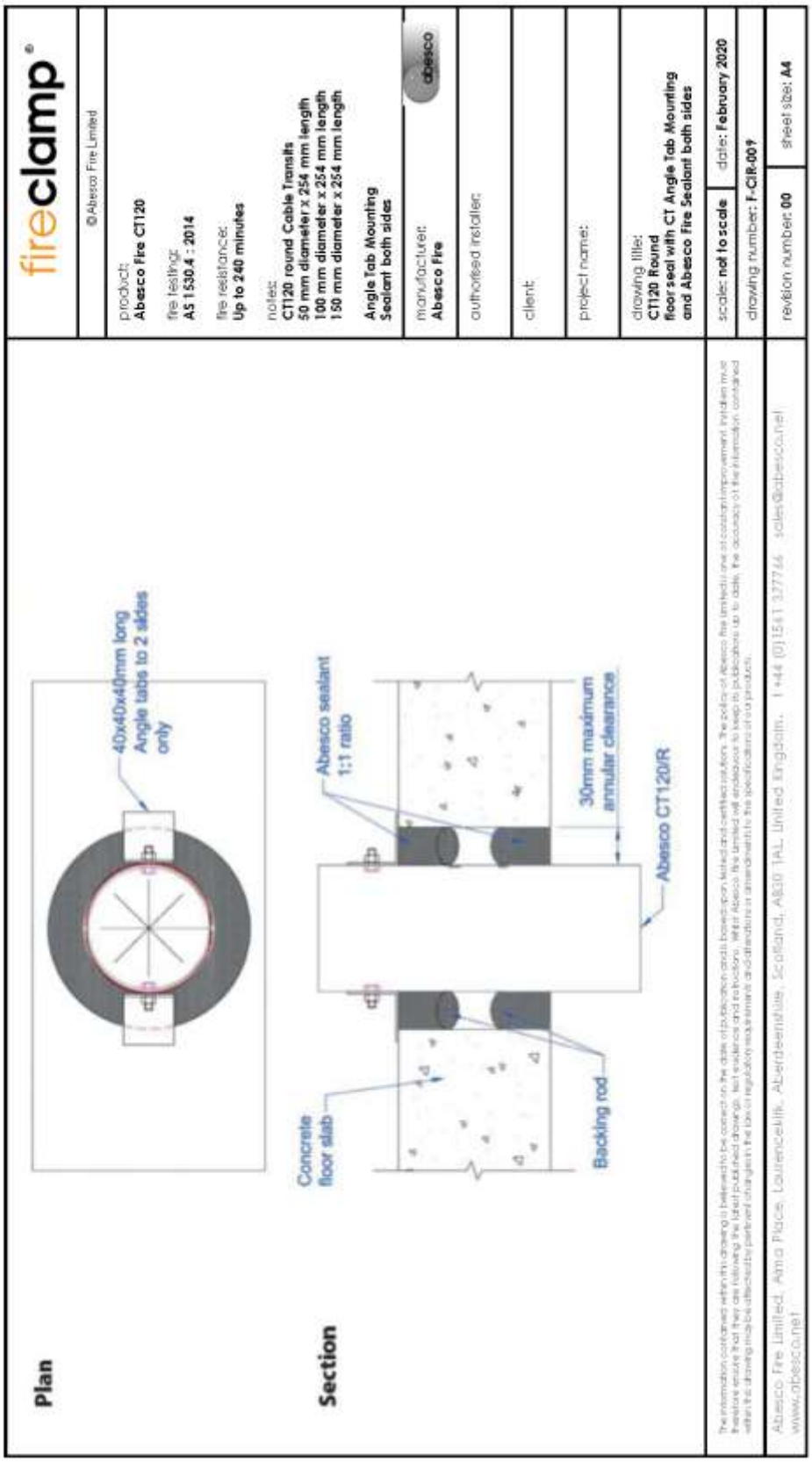

**Figure 10: Drawing No. F-RECT-1-010 – CT120 Floor seal with CT mounting flange and Abesco fire mortar + permanent formwork**

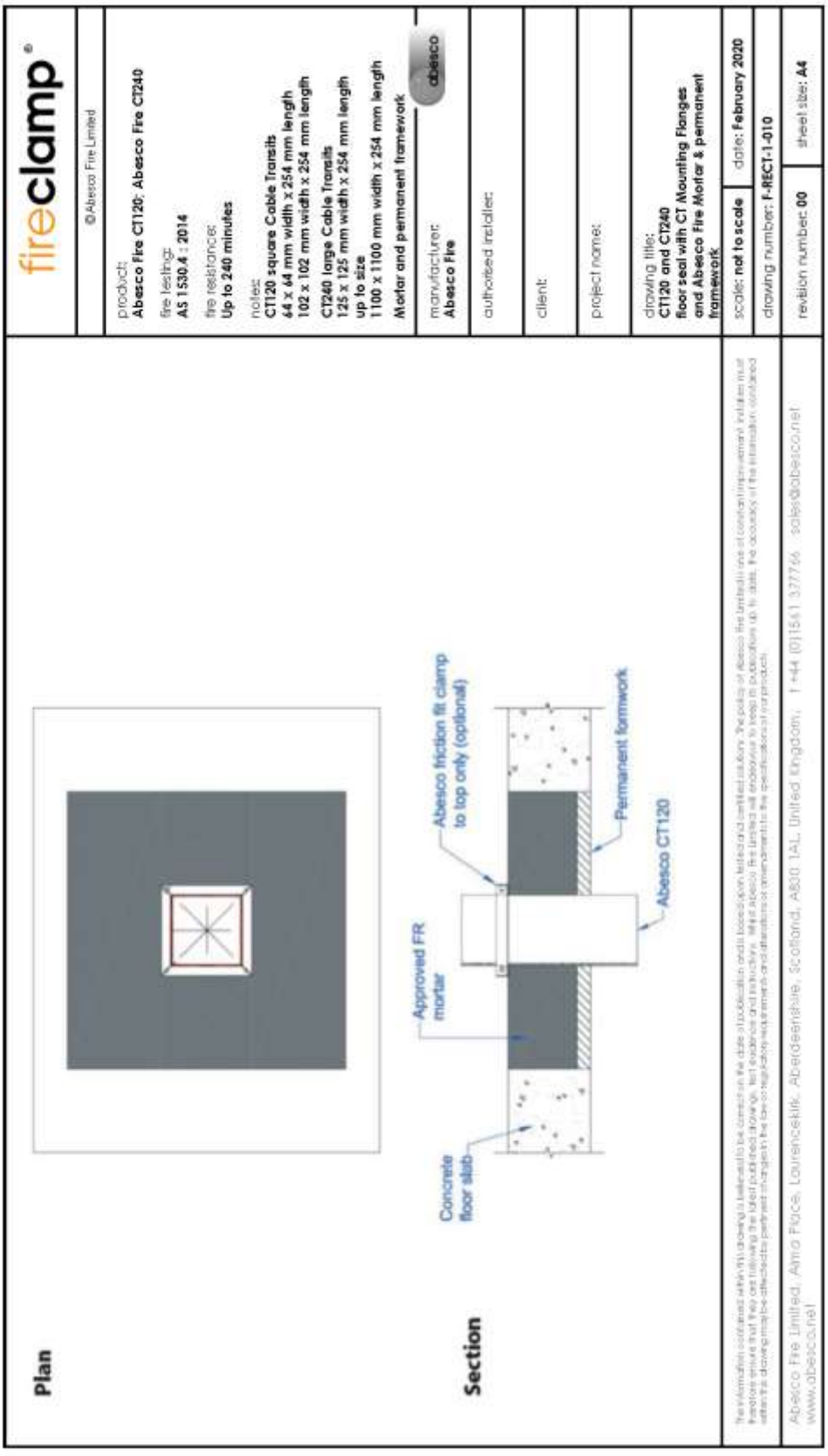

**Figure 11: Drawing No. F-CIR-011 – CT120/R Floor seal with CT mounting flange and Abesco fire mortar + permanent formwork**

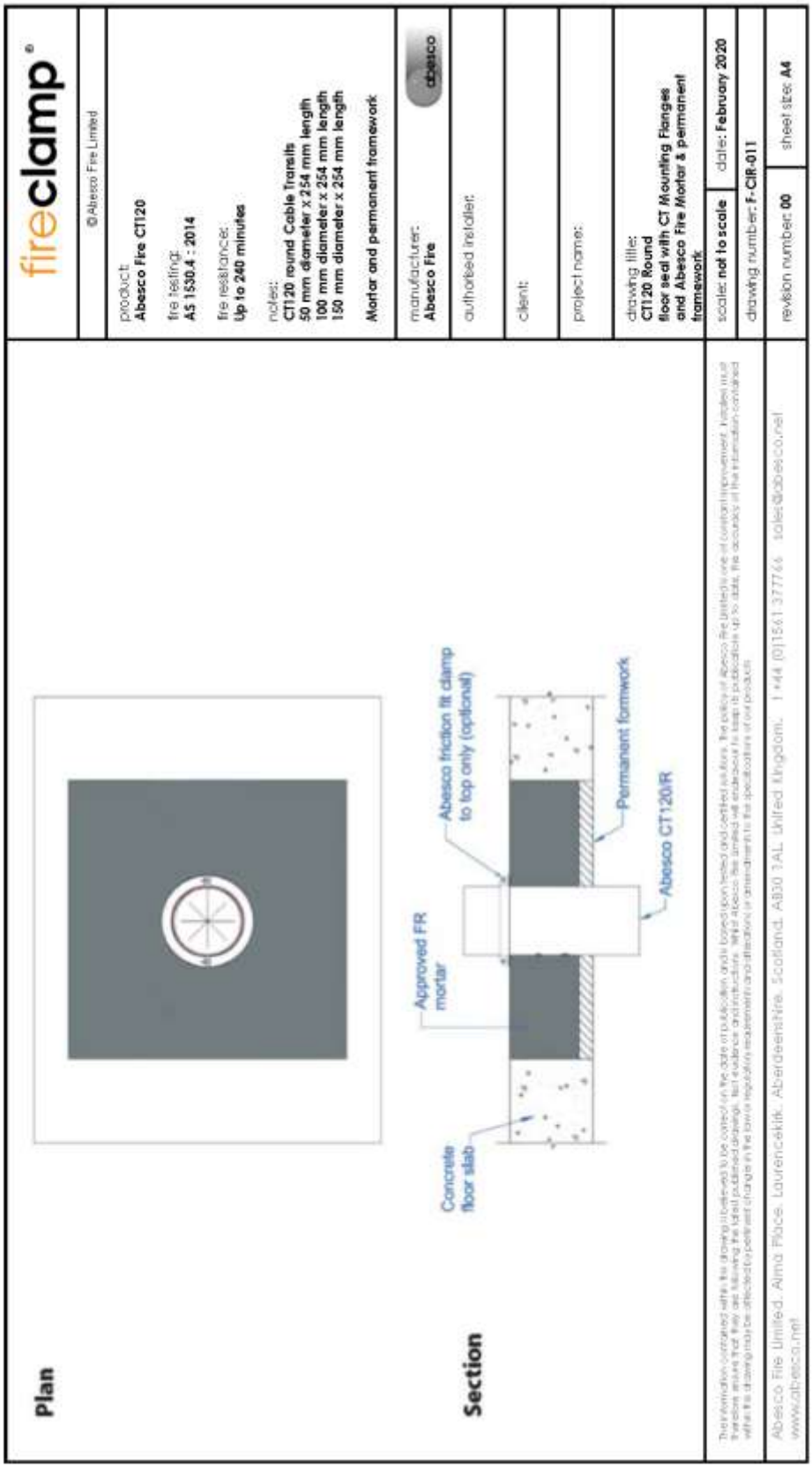

**Figure 12: Drawing No. F-RECT-012 – CT120 Floor seal with Abesco fire mortar**

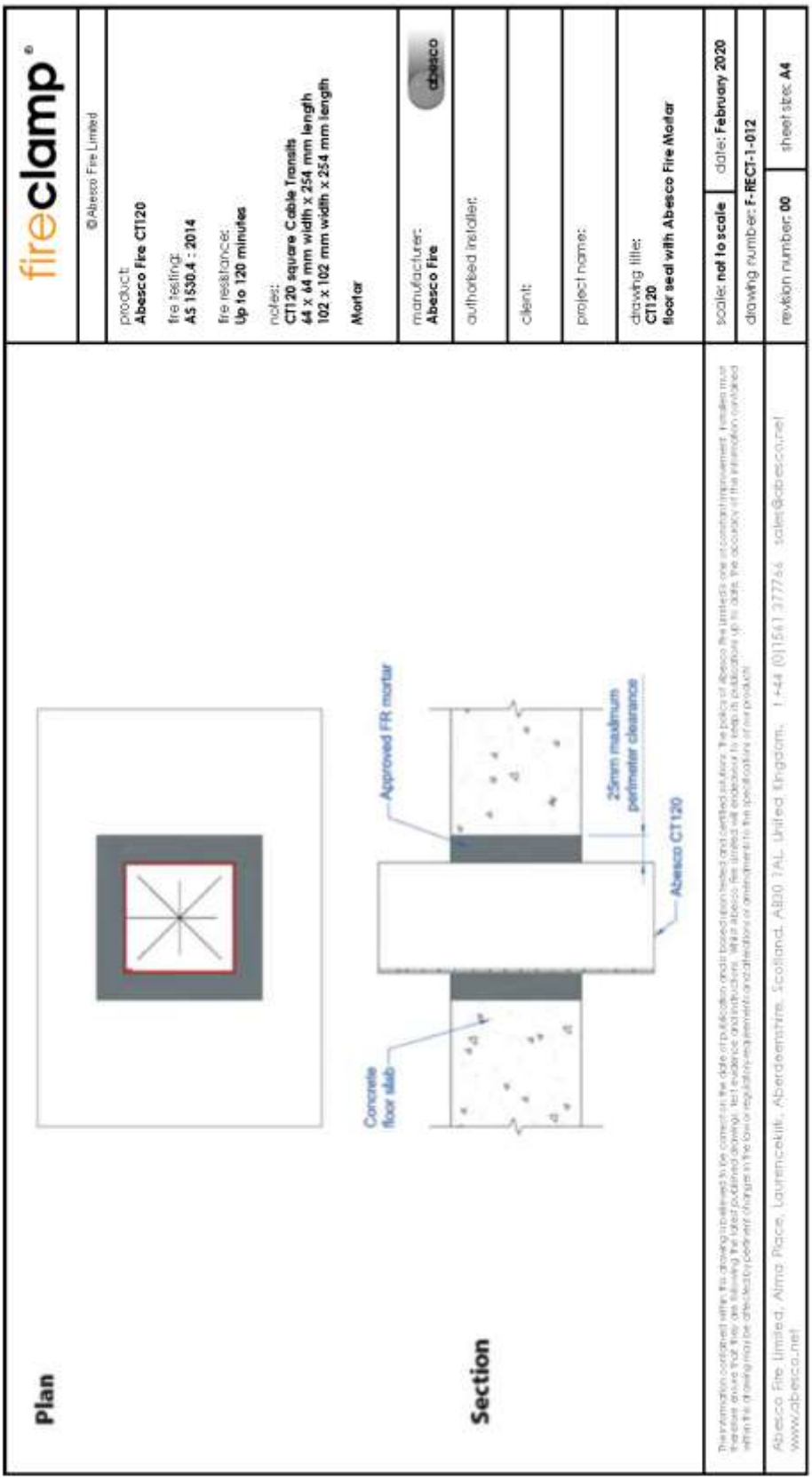







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**Figure 13: Drawing No. F-CIR-013 – CT120/R Floor seal with Abesco fire mortar**

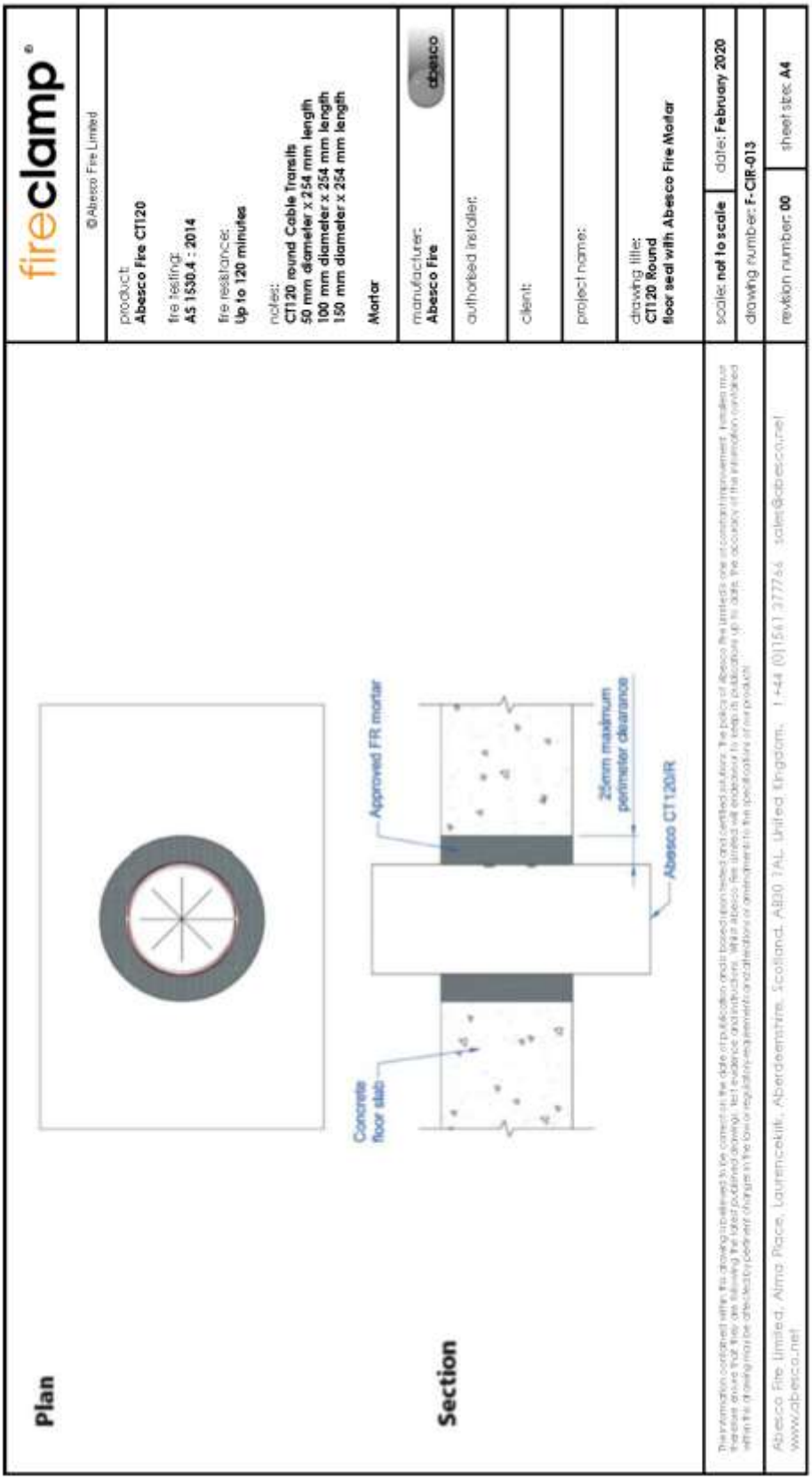

**Figure 14: Drawing No. F-RECT-014 – CT120 Floor seal with wall fixing and Abesco fire mortar + permanent formwork**

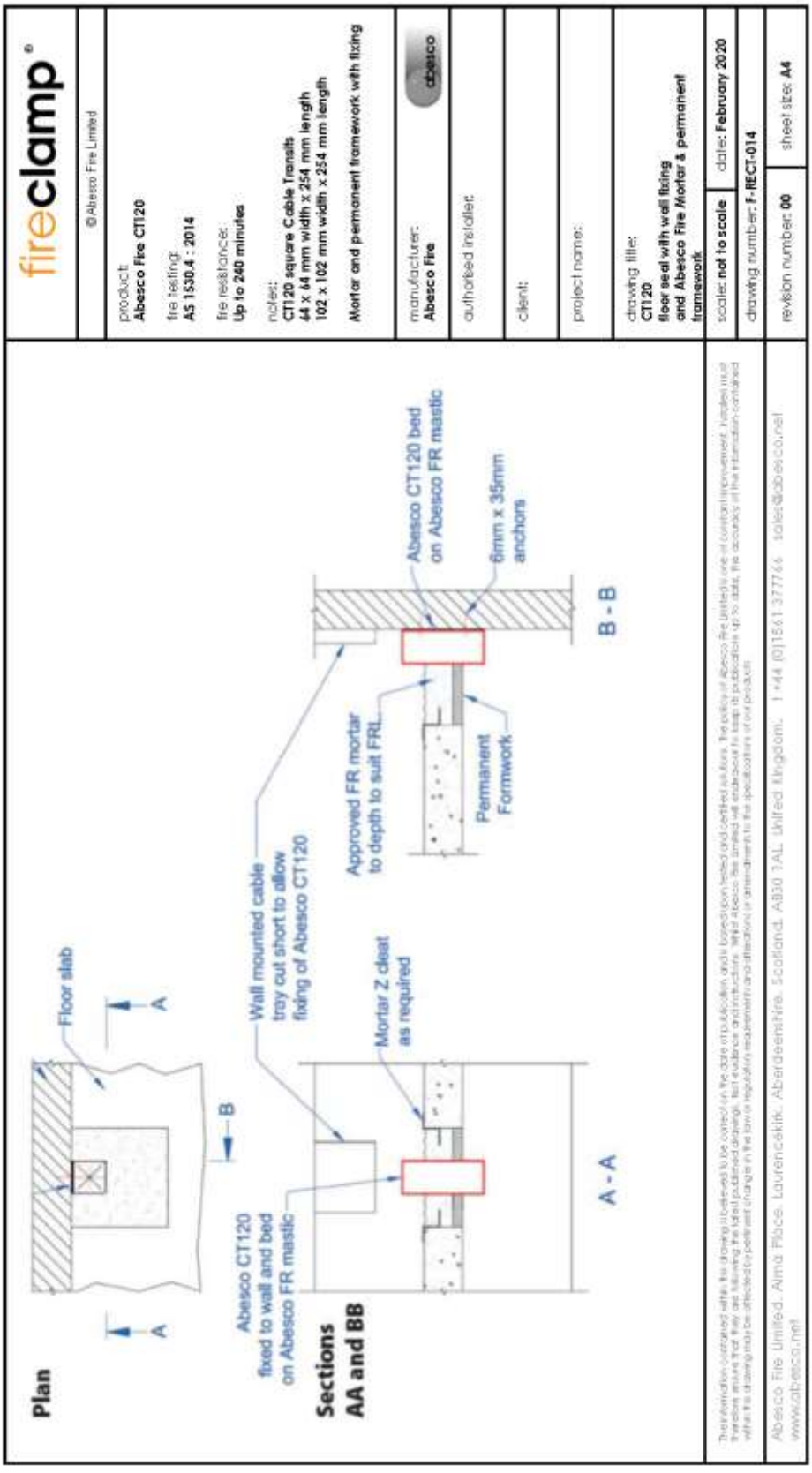

**Figure 15: Drawing No. W-CIR-015 – CT120/R Rigid wall seal with CT mounting flanges and Abesco fire sealant**

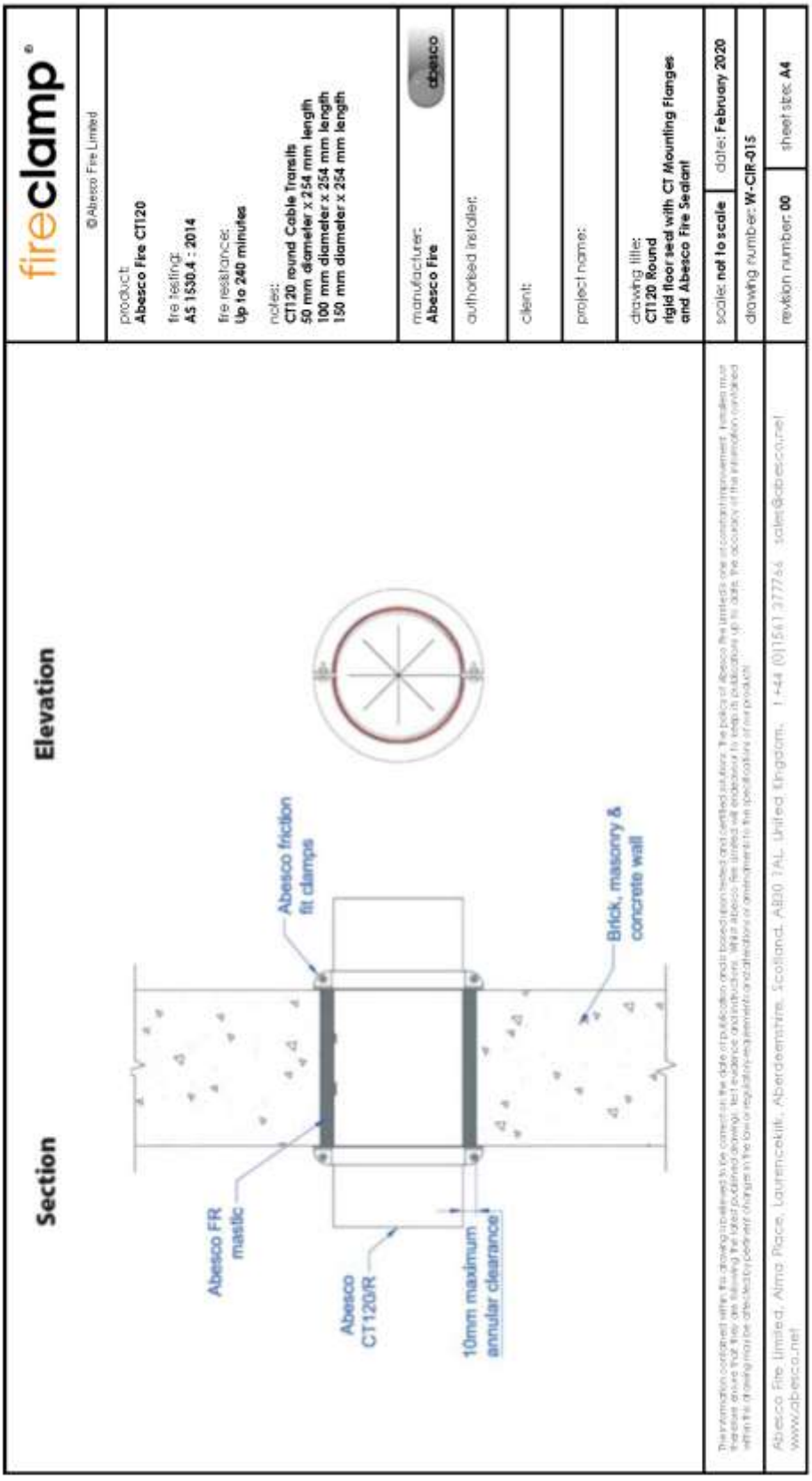

**Figure 16: Drawing No. W-RECT-1-016 – CT120 Rigid wall seal with CT mounting flanges and Abesco fire sealant**

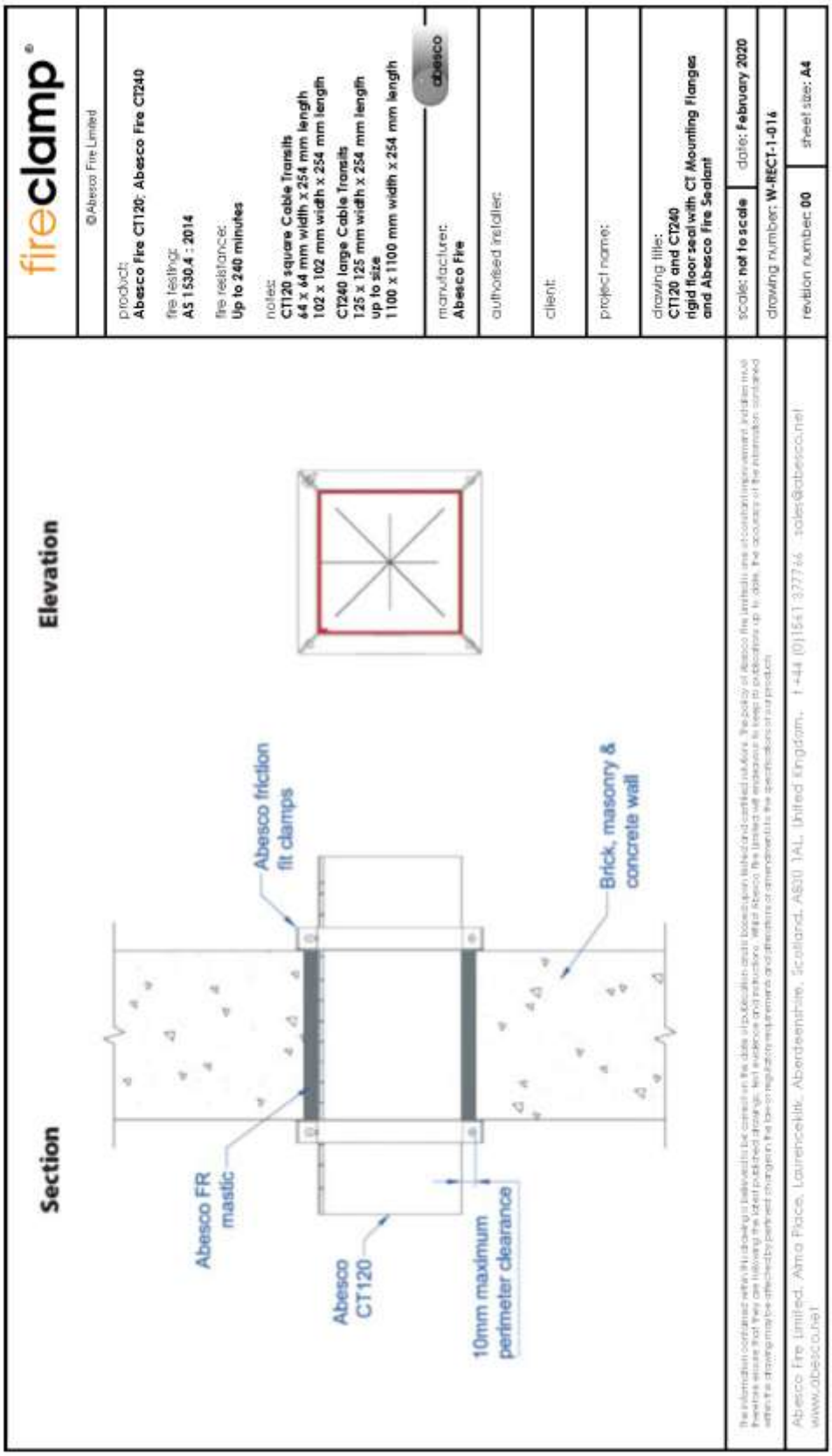

**Figure 17: Drawing No. W-RECT-2-017 – CT120 Duplex rigid wall seal with CT mounting flanges and Abesco fire sealant**

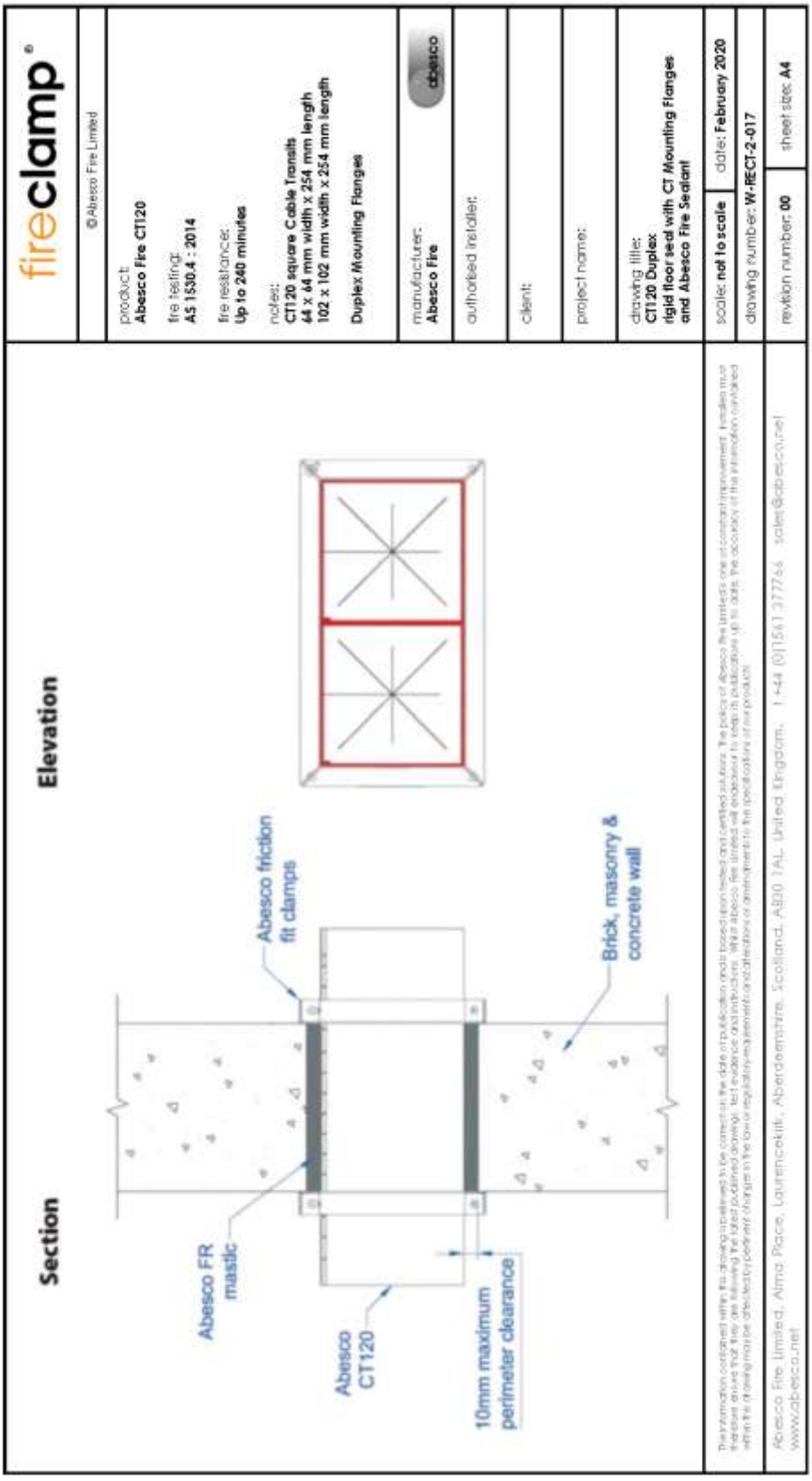

**Figure 18: Drawing No. W-RECT-3-018 – CT120 Triplex rigid wall seal with CT mounting flanges and Abesco fire sealant**

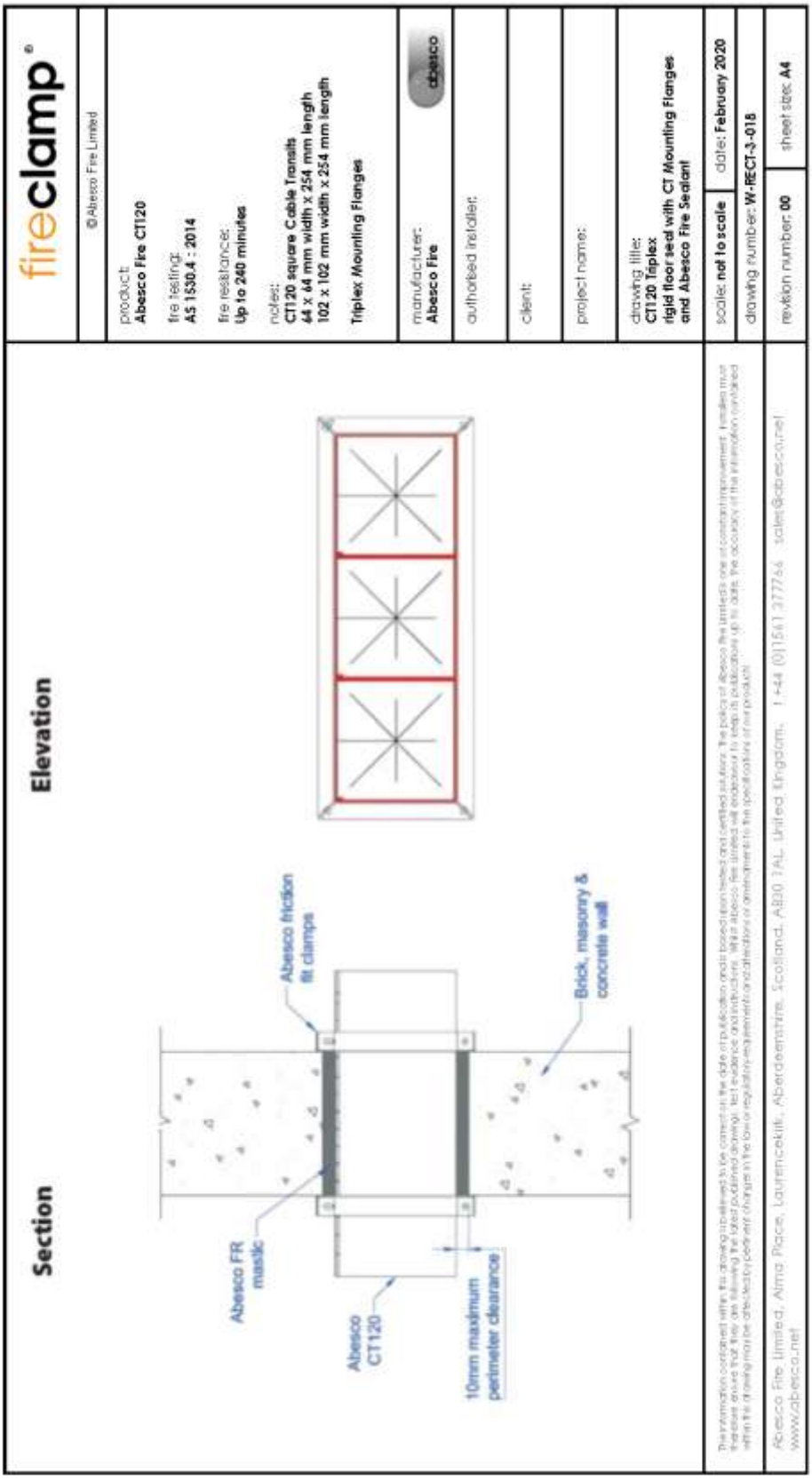

**Figure 19: Drawing No. W-RECT-6-019 – CT120 Sixplex rigid wall seal with CT mounting flanges and Abesco fire sealant**

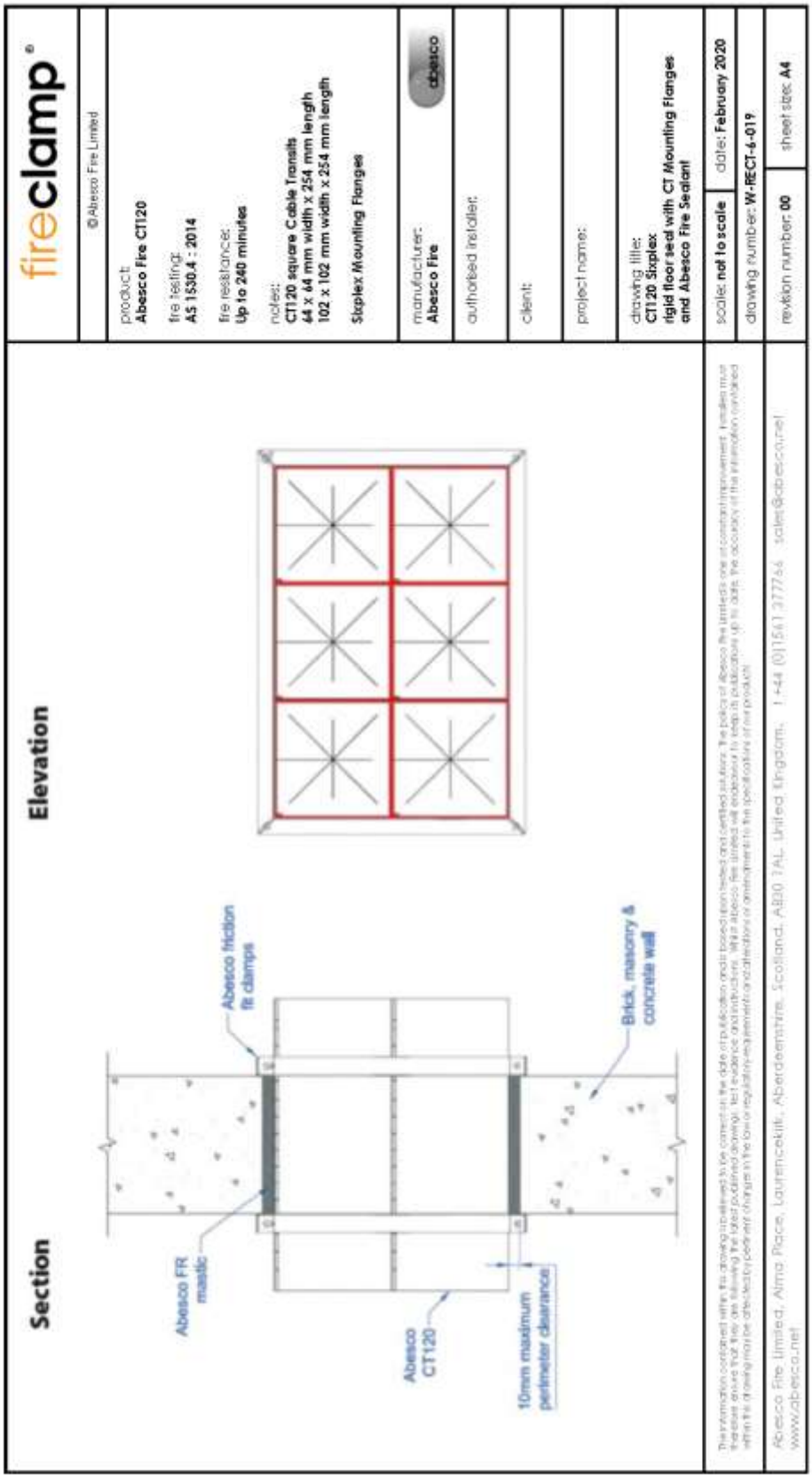

**Figure 20: Drawing No. W-CIR-020 – CT120/R Flexible wall seal with CT mounting flanges and Abesco fire sealant**

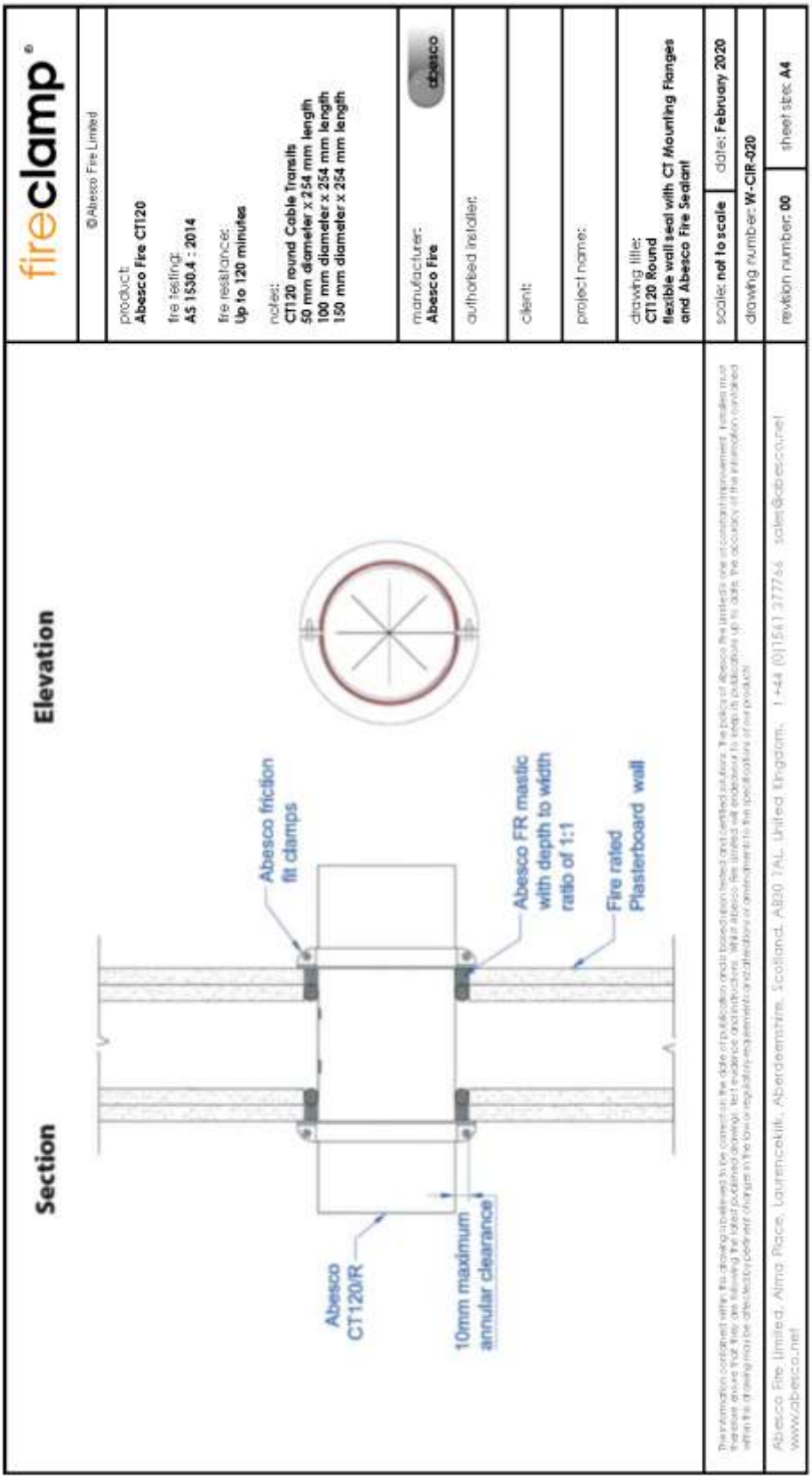

**Figure 21: Drawing No. W-RECT-1-021 – CT120 Flexible wall seal with CT mounting flanges and Abesco fire sealant**

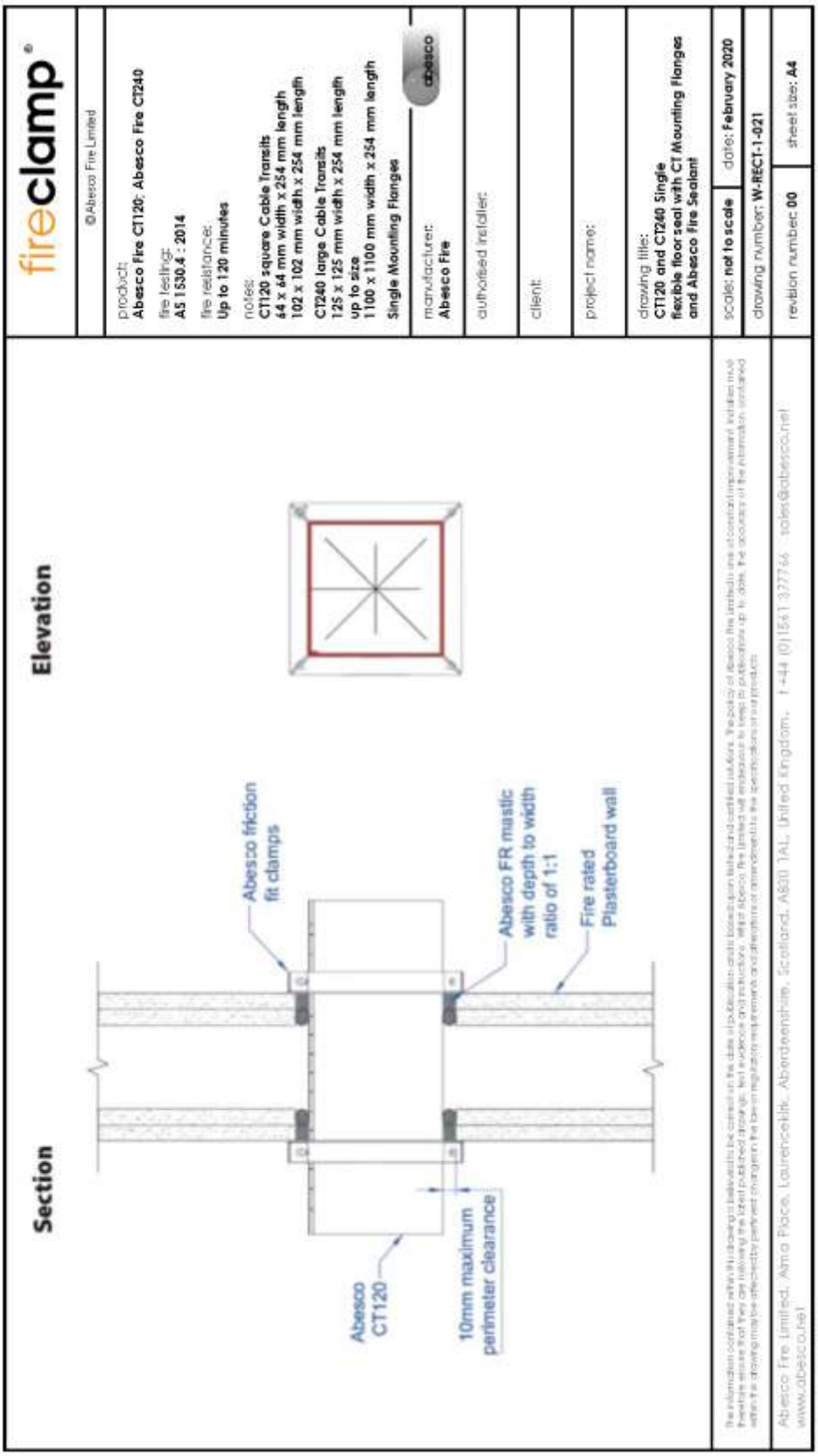

**Figure 22: Drawing No. W-RECT-2-022 – CT120 Duplex flexible wall seal with CT mounting flanges and Abesco fire sealant**

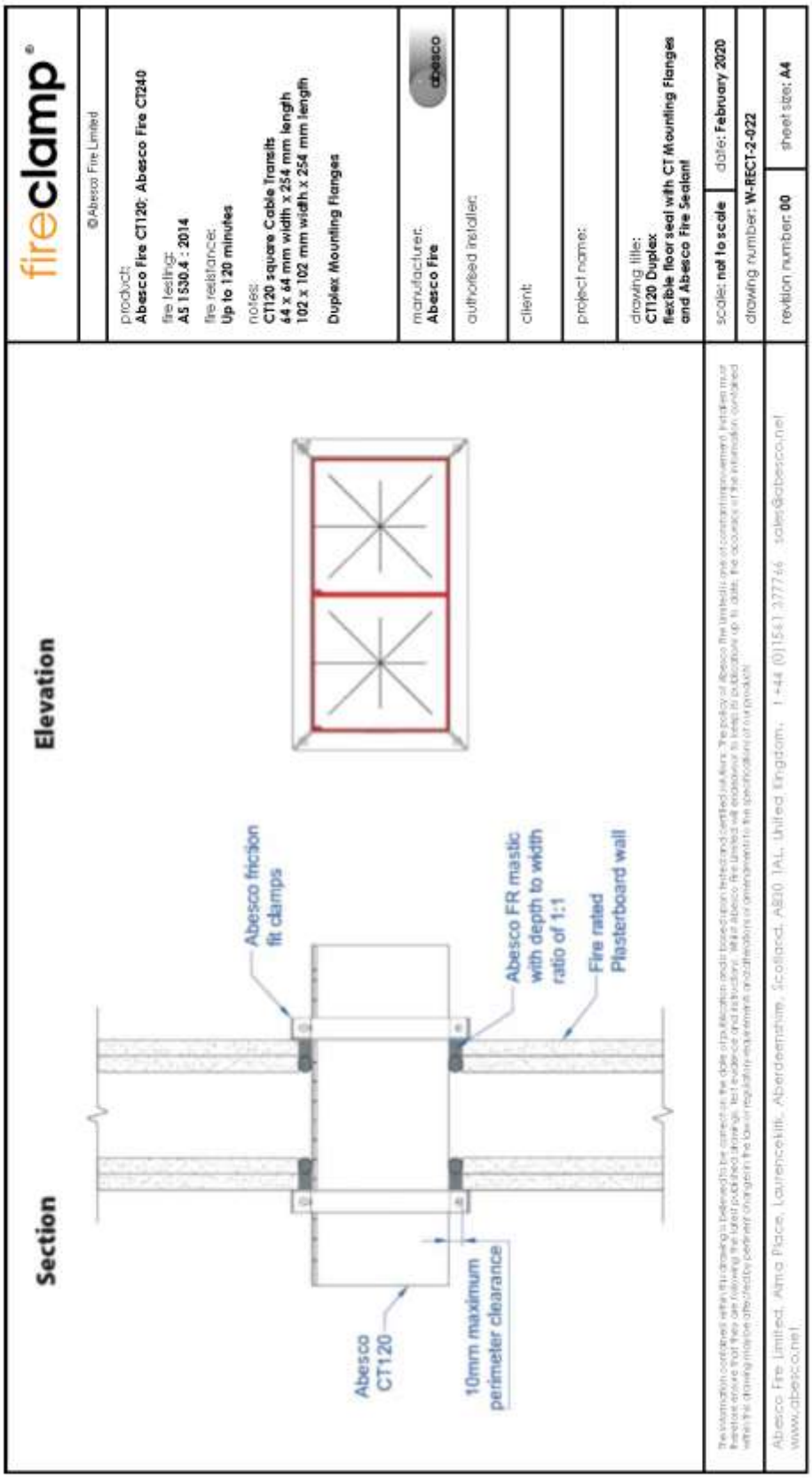

**Figure 23: Drawing No. W-RECT-3-023 – CT120 Triplex flexible wall seal with CT mounting flanges and Abesco fire sealant**

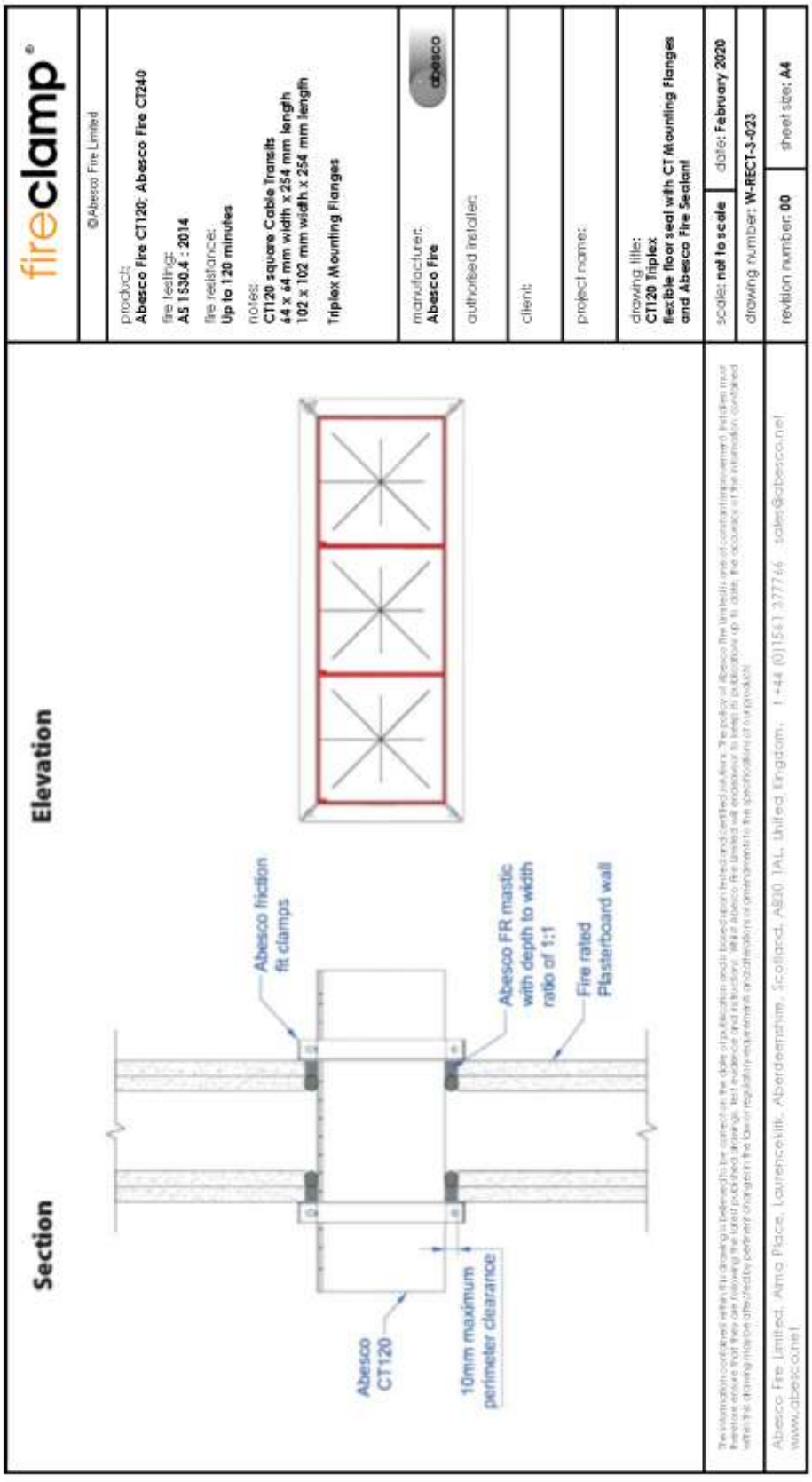

**Figure 24: Drawing No. W-RECT-6-024 – CT120 Sixplex flexible wall seal with CT mounting flanges and Abesco fire sealant**

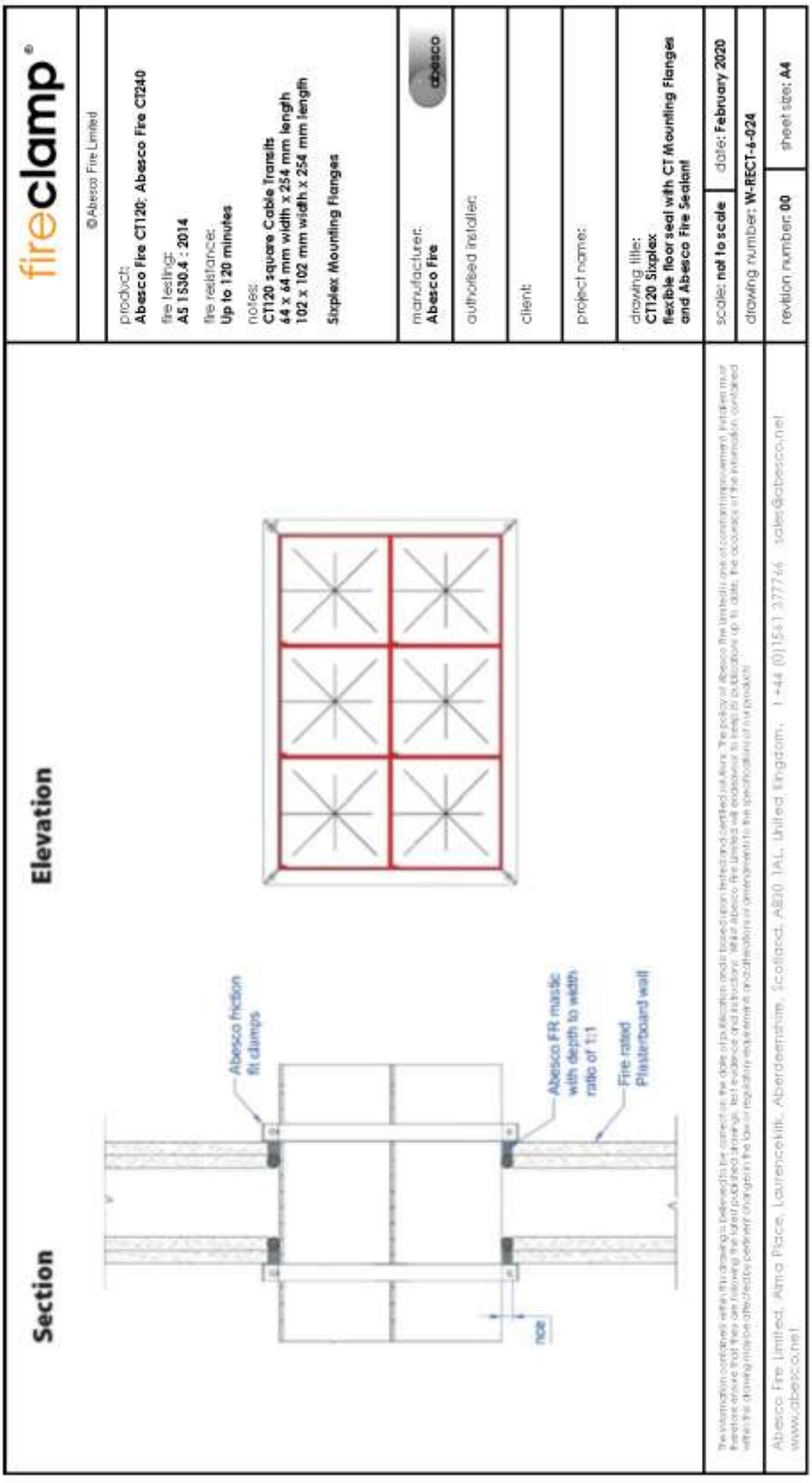

**Figure 25: Drawing No. W-RECT-1-025 – CT120 Laminated wall seal with CT mounting flanges and Abesco fire sealant**

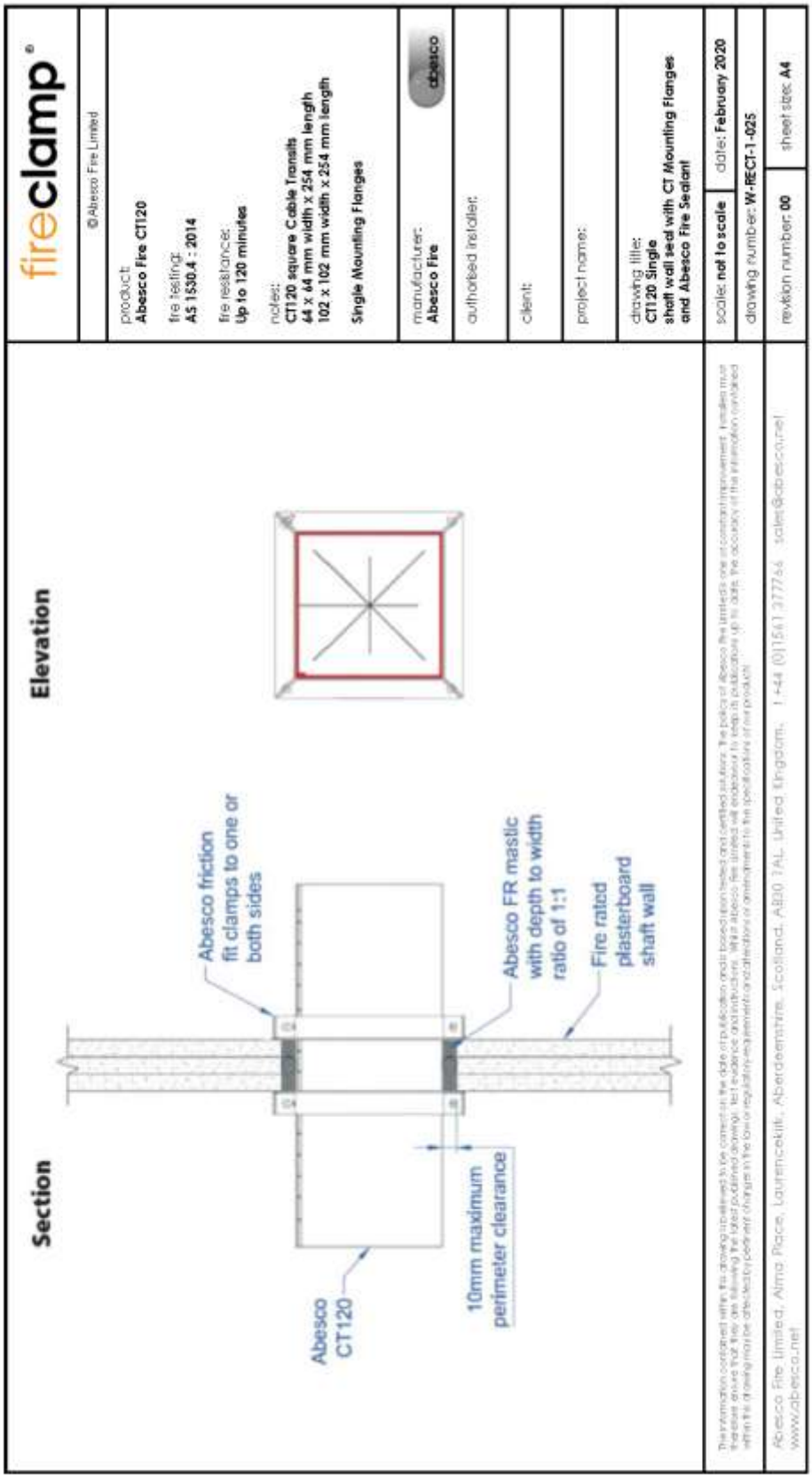

**Figure 26: Drawing No. W-RECT-1-026 – CT120 Rigid wall seal with CT angle tab mounting and Abesco fire sealant both sides**

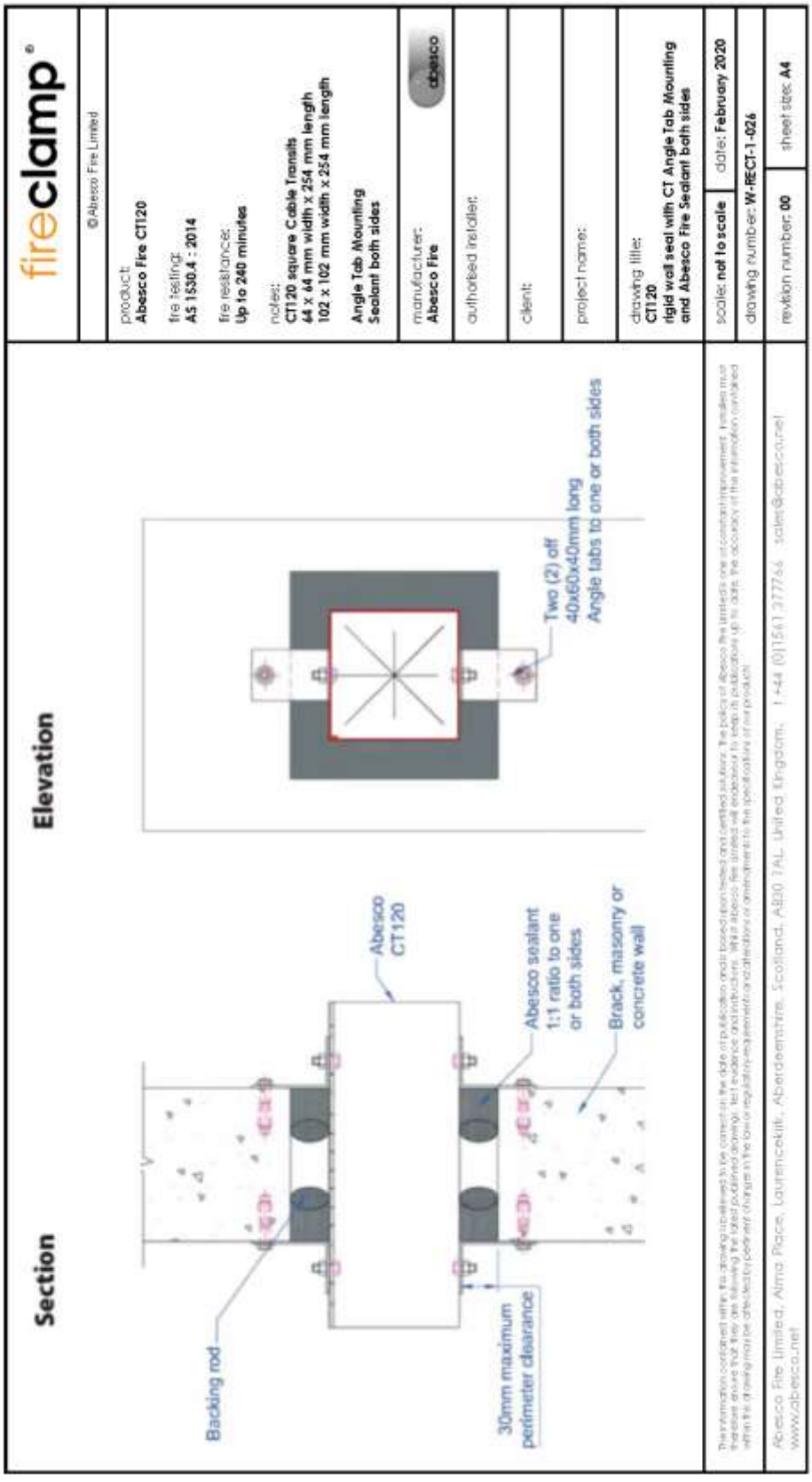

**Figure 27: Drawing No. W-CIR-027 – CT120/R Rigid wall seal with CT angle tab mounting and Abesco fire sealant both sides**