



ABN 82 056 662 938

Firedampers for Beginners



The following is intended to give you a very brief education on the installation of fire dampers and things to look for, or to avoid doing if you either come across them on site, or have to install one.

Simple Rule No 1 If it doesn't look right, it probably isn't

As the rule say, if it doesn't look right is probably wrong. If the installation isn't neat and tidy, if there are pieces obliviously missing, or you can see gaps and holes around the damper, then yes its not going to be right.

If it looks right, is neat and tidy and you can see an access panel and a label then there is high chance that it will be ok, hopefully this brief training will give you a better understanding of what to look for.

Simple Rule No 2 All new fire damper installations have to be signed off – certified

All new fire damper needs to be certified. All new fire dampers need to be numbered, marked up on a drawings and installation label fitted to, adjacent damper. Certification letter to be issued listing all dampers covered.

Our letter should note that the certification is for only new fire dampers installed by Ryan Wilks are included and that existing dampers are not included in our certification.

Simple Rule No 3 If we connect to, or modify and existing fire damper with our works then we must re-certify this firedamper

Any such dampers need to be re-inspected, made good if necessary ** and included on our certification letter. If there are issues preventing us being able to re-certify this damper (i.e wall construction issues) then this needs to be brought to the attention of the client for direction, and if not rectified this should be clearly noted in our certification letter.

Simple Rule No 4 All Fire dampers on a site need to be checked every 5 years as a requirement for annual certifications.

As part of annual building fire certification 20% of all fire dampers are required to be checked and recorded. The principle is that the next year another 20% of dampers will be checked so that after 5 years of inspection all dampers have been inspected.

The same 20% of dampers <u>are not</u> to be tested year after year because they are the easiest to check and or do comply where others wont. We have developed checksheets and stickers for fire damper maintenance inspections.

Simple Rule No 5 You are not qualified to certify any fire dampers

At the end of each project we are required to provide a number of different certifications for various sections of the works, firedampers will be one of these parts. You are not deemed competent to sign off on fire dampers, so if asked to do so DON'T. This is where you need to ask for help, but you need to ensure that you have enough site records (photos and subbie sign offs) to enable Ryan Wilks to complete certification.

Ok, the simple rules are understood so now where do we start?

In the same way they we need to fire rate cables going through fire rated walls so does ductwork and other services passing through the wall need to be fire rated. Unfortunately its not as simple as filling the surrounding gap with Promat.

So what is a fire damper? Simply as the name suggests it's a fire protection device, a tested metal sleeve mechanical device that will stop a fire from travelling through a fire rated wall or slab – when installed correctly, as per the manufactures test report and in a suitable constructed and rated wall, slab.

Where are they used? Used in air conditioning and ventilation systems.

Are they all the same? No, there are 2 types of dampers, either mechanical or intumescent.

Mechanical dampers dependant upon the application they can be "drop type" curtain (most common), single or multi blade. There are different fire dampers for horizontal or vertical installation. Standard dampers have duct to duct connections and flat ends, special dampers are required with flanged ends for insertion into wails where grilles or louvres are fitted.

Intumescent dampers have no mechanical devices and are activated by heat. They have size limitations and have different installation requirements that mechanical (metal) dampers









So we no know there are 2 types and what they look like, so;

Does one size fit all? No. Each fire damper must be sized to suit the duct or opening into which it is going to be installed, and include for minimum installation clearances as governed by Australian Standards. The installation details will also differ on the type of damper to be installed and where it is to be installed and into what.

In simple terms the fire damper size is the same size as the duct that it is connecting to, and the wall opening needs to be constructed to suit the fire dampers size plus expansion (general rule is duct + 30 mm alround). If the fire damper is going into a existing formed opening in brickwork or concrete then the damper needs to be ordered the size of the opening minus 30 mm.

Is there anything else I need to know before I can order a damper? Yes.

- Fire dampers can come with different fire ratings, the most common being 2 hr. The fire rating of the fire damper must match that of the surround wall, slab. this is very important!
- In addition you will need to nominate which way the air is flowing, up, down, left or right.
- Lastly any special requirements need to be noted, this can either be one by way of notes on the schedule, or sometimes it is a lot easier to include a sketch or diagram.
- When ordering dampers request a copy of Suppliers Installation Details and Test Report to be supplied with the dampers.

So Where do I get one? Sorry but no you can't buy one off the shelf. Given that fire dampers are a fire safety device there manufacture, testing, installation and on going maintenance is covered by Australian Standards and as such limits who can build them. The major manufacturers that we would use on a regular basis are Bullock Manufacturing, Riley Air Control, Airgrilles and Holyoake.

So how long to make one? In general Airgrilles and Holyoke will provide dampers in 3-4 weeks. Bullock and Riley in general will be 2-3 weeks, but these are generally more expensive.

Below is an example of typical fire damper schedule for a project.

If in doubt about ordering fire dampers then ask!



Unit 23, 28 Vore Street Silverwater NSW 2128 Tel: 9748 1211

Fax: 9748 8916

All fire dampers to be supplied with fire wrap fitted to damper case and loose flanges, min 50 x 50 mm

Slab (horizontal mounted) dampers, air flow up or down to be nominated



1/01/2015 1 of 1

FIRE DAMPER SCHEDULE Project: ample project Project No: Rev A Wall/Slab Damper Location Type Fire Damper Type Notes, Comments Vertical = wall Thickness Flow No Size refer Horiz = Slab (Duct Size) legend Grd Floor Plantroom, Supply 1 Vertical 110 1000 600 D/D Grd Floor Plantroom, Supply 2 Vertical 110 1000 700 D/D Gr Floor Plant, Return Air 1 Vertical 110 1000 500 1000 G/D Gr Floor Plant, Return Air 1 Vertical 110 1000 Flanged entry, RA45 return air grille Gr Floor Plant, Return Air 2 Vertical 110 1200 600 D/D Grd Plantroom, TEF -1 250 300 D/D Up Horizontal 300 Access from above damper Grd Plantrrom EF -1 Horizontal 250 300 300 D/D Up Access from above damper Grd Floor Plantroom, SAF 2 D/D Access from above damper Horizontal 250 500 300 Down Basement, TEF 1 200 300 300 D/D Vertical Basement, EF 1 Vertical 200 300 300 D/D Grd Floor Loading dock 1200 600 G/D Flanged entry, to suit OAL 50 intake louvre Vertical 250 Grd Floor Spill air Vertical 1200 1000 D/G Flanged discharge to suit OAL 50 Louvre 13 14 15 16 X 17 х 18 19 X 20 Manufacturer / Supplier.

D/D = Duct to duct, D/G = Duct to grille, air flow duct thru grille, G/D = Grille to duct, airflow through grille to duct, S = Special, details or sketch required

Installation of Firedampers for Beginners

So we have the fire dampers on site, now what?

Who installs them? The sheetmetal subbie installs the fire dampers. The installer must be deemed competent by knowledge and or training that the fire damper installation meets the requirements of AS1668.1.2012, AS 1682 Part 1 & 2 . 1991 and for maintenance of fire dampers AS1851.6

Are any special installation requirements that you should be aware of? Yes

- There are a number of simple installation checks that you can visually carry out on site.
- is there an access panel fitted and is suitable size
- is the access panel clearly accessible, access is not blocked
- fixing flanges are fitted flat to the wall no gaps
- there are no obvious gaps around the fire damper
- there are no other services running through the same hole,
- Other services running though the wall maintain minimum clearances to fire dampers, cables no closer than 50 mm, pipes no closer than 200 mm.
- Is there a break away joint (RW Standard we want to see plastic nuts, bolts and clips)
- the fire damper labelled
- Slab mounted fire dampers duct above and below the damper is insulated for minimum 1000mm

These are basic simple things to be aware of. More detailed checklist items arte covered in following slides

General note; Co-ordination of other services: It is important to remember when installing any services on site to co-ordinate them with the existing services, structure. If there is an access panel located a duct, or in a ceiling, then this is there for a reason. Running any new services (i.e cable tray or busduct) across any access panel defeats the purpose of the access panel, therefore access panels are to be avoided at all times.

If you have no option but to block off an access panel then approval must be obtained from the client, and alternate access panel provided.

As shown below we have developed fire damper installation inspection sheets to be used for tracking and sign off on all new fire damper installations.

This form needs to be <u>issued to the installation sub contractor</u> and they are to complete the sign off for every damper. This tracker needs to be progressively completed as the dampers are installed.

It is recommended that photos be taken of the installation of the various stages all dampers which can be included as attachment to this records or simply kept as a future record.

It should be noted that the majority of fire damper installation issues do not arise during handover of projects but generally several years down the track when re-certification occurs.

It is important that all installation records are included within our project certification documents and Operating Manuals so that our clients have records

RYAN @@@
WILKSPTY LID
***CONSIDER FOR THE PROPERTY OF THE PROP

FORM: RW-MCOM-15

Unit 23, 28 Vore Street, Silverwater, NSW 2128, Australia P: +61 2 9475 2414 F: +61 2 9748 8916 www.ryanwilks.com.au

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	certificates and record	ts																	
Note 2	For details of fire dam	per manufach	arer and app	licable tes	t certificate	s refer to F	Tre Dampe	r Complian	nce Criteria	Form RW	-COMM-17	7, project re	rs						
Note 3	Unless the firedamper	meets FRL in	nsulation crit	eria ductw	ork installe	d above fic	or mounte	d fire damp	ers is to b	e insulated	(2m) or er	nsclosed in	masonry :	haft to con	npley with	AS 1668.1	Clause 3.4	(b)	

FIRE DAMPER INSTALLATION CHECK LIST (Based on AS 1662.2 – 1991 Fire Cample In action)

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21 PRINCIPLES OF INSTALLTION

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2. 7. Reviewe temporary supports after merelletten.

2.12 Remove temporary supports after installation

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replated or enabled in masonry freter AS (\$68.1 Cause 3.4 o).

2.15 Remove construction debris from the fire damper and within the adjacent duction.

2.26 Record the creating process of the criginal intuition using the hispattion form over page, Record any damper

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Proper results on of the firenes's tent out on floor is generally not the responsibility of the FMAC contractor but in some property. All the tile 3 delegated to the FMAC contractor.

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have carried out all necessary inspections and verify that the above firedampers have been checked and are deem to meet the requirements for Name stallation of fire dampers as outlined in A8 1682 Part 1 & 2 - 1991. I confirm that I am competent by knowledge and training to sign off these

Ok, now for the biggy. You will note on the installation record in the last column there is reference to the construction of the wall, structure into which the firedamper is mounted, "Wall construction as per manufacture's instructions, certification received".

So why is this important? The wall construction, and more importantly the construction of the actual opening in the wall are key component of any fire damper installation, and certification. Once installed the damper is then part of the fire integrity of the wall. When your signing off on the fire damper installation, you are signing off (certifying) that the wall is also complete.

This is a contentious issue, a little like who came first, the chicken or the egg. How can we responsible for the wall if it isn't built right if we didn't build it??? Well the consensus is that we are, so as such we need to take all measures to ensure that the walls are correct, and if not identify where they are non complaint.

We can do this by;

- Obtaining wall construction certification by the installer. The installer of the wall must certify that the wall, and the openings have been constructed to a specific suppliers details and the nominated fire rating level.
- Observing and inspecting the construction of the wall and opening. it is important that when ever possible that photos are taken during the construction of the wall, the forming and lining of the openings and as the damper is being installed, these can be used later on to support our final certification. (note any photos, records will need to be referenced with the fire damper number)
- Identification of and any non compliance issues

Obviously this is going to be a lot easier for new wall installations as opposed to cutting and fitting of dampers into existing walls We are lucky that on most of our projects we will be responsible for the installation of the walls, and as such will have control over our contractors to ensure that the construction is correct.

Existing walls, in this instance we need to identify and confirm the existing wall construction. There may be no existing records available and the only way you will find out is when you cut the hole in the wall and inspect the existing gypock sheets. The new hole opening must be trimmed and lined as per manufacture's details to maintain the fire rating integrity of the wall. All openings must be trimmed.

Installation of Fire dampers for Beginners – Wall Construction

So openings in brick or concrete walls are pretty straight forward, they need to be complete and clear, no missing or loose bricks. Gyprock walls are generally where problems arise.

Where do I find the fire rating of the wall? The construction of the wall, and its fire rating capacity (FRL) are indicated on the project fire safety schedule and in design documents on the architectural plans.

Education bit: All fire rated elements are identified by their FRL, generally noted as FRL --- / 120 / 30. This is usually noted on the architectural drawings. The important number here is the second number, the 120 is length of time in minutes that the damper must maintain its integrity (not fail), in this case 120 min = 2 hrs.

Fire dampers must have the same rating as the wall that they are being installed into.

FRL = Fire Resistance Level and comprises 3 components; Structural adequacy / Integrity / Insulation Structural adequacy — ability to maintain stability & load bearing capacity to test AS 1530.4 (in minutes ie 120 = 2 hr) Integrity — ability to resists the passage of flames and hot gases to test 1530.4 (again in minutes) Insulation — ability to maintain a surface temperature , not exposed to a furnace below the limits of as 1530.4 FRL numbers for building elements are detailed in BCA Spec C1, Table 3

The wall must be constructed to the suit the, and must be constructed as per the manufacturer/suppliers installation details to meet that standard. (i.e Boral 2 hour gyprock wall must be constructed as per details in the "Red Book". In general this will be 2 layers of fire rated sheet over a metal stud.)

Any openings in this wall must maintain the same fire rating capacity (FRL) of the wall, so the internal sections of the opening must also be trimmed and lined. The clear internal trimmed size of the hole must be equal to the size of the firedamper plus 30 mm alround.

Examples of typical construction details are shown on next slide, remember that walls constructed from CSR products must be constructed to CSR "Redbook" standard, similarly walls constructed from Boral product must be installed to Boral standard. In all instances the internal faces of the openings must be lined.

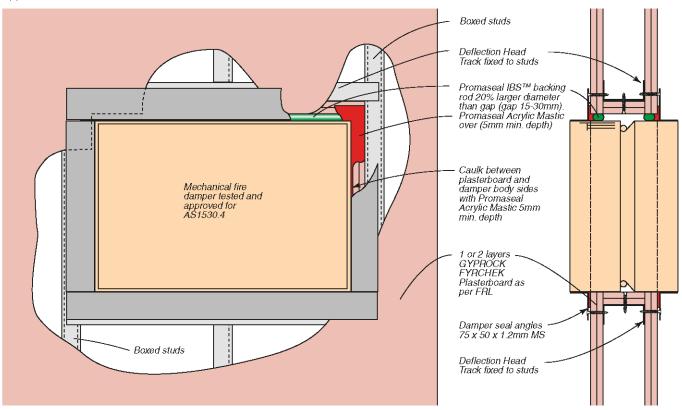
Fire dampers for Beginners – CSR Wall & Opening Construction

Fire Damper Penetrations in Walls

Detail FIG Z212 is suitable for dampers rated up to FRL -/120/-. Duct weight must not be supported by the wall. For full specifications and installation details, refer to the appropriate damper manufacturer.

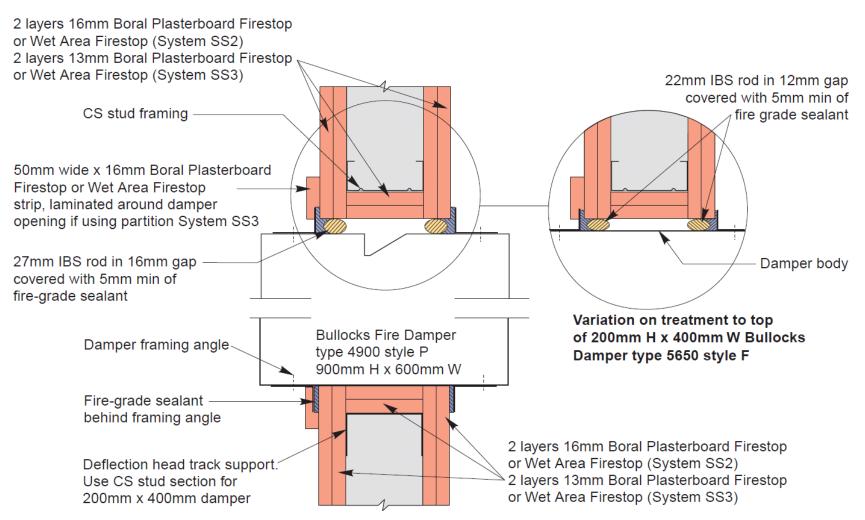
FIG Z212: INSTALLATION DETAIL FOR FIRE DAMPER IN STUD WALL SYSTEM

Appraisal: PROMAT FCO 2106



Ref: CSR Red book, page 245.

Fire Dampers for Beginners – Boral Wall Construction



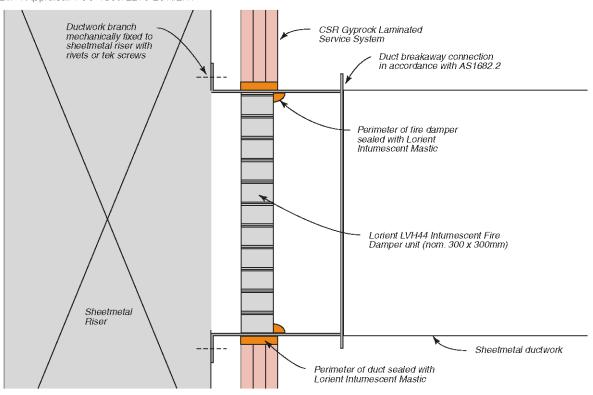
Typical fire damper in FRL 120/120/120 steel stud wall

Firedampers for Beginners – Typical Intumescent Damper Install

The installation details for Intumescent type dampers are different to metal mechanical dampers. For details you will need to refer to the manufacturers installation instructions. In general these requirements are less than for mechanical dampers

FIG Z213: INSTALLATION DETAIL FOR LORIENT LVH44 FIRE DAMPER

FRL -/120/-. Appraisal: FCO 1869/2276 LORIENT



The Red Book™

What about other fire rated wall constructions, such as Hebel, Speedpanel or Durawall, what do we do?

The same principles apply no matter what the wall construction type, material. The installer must provide certification that the construction has been as per the manufacturers installation details for that particular product, installation type. You should ask for a copy of te construction details before works proceeds and do some checking of your own, check the suppliers web site to check its correct,, google search that particular installation.

If a contractor wants to use a product like hebel when gyprock is documented, obtain approval for the change from the client, and preferably certifier.

What if there is a problem with wall construction? If we identify problems with the wall constructions, i.e. should be 2 hour but is only 1 hour, we need to notify our client and ask for direction.

If you know that the hole, or wall is not constructed properly you can not sign the damper off.

If you thinks that the wall or opening construction is not correct, you can not sign it off.

If we proceed with the installation of the damper (after instruction from the client) then we clearly need to identify on our checksheets the relevant non compliant issues and then include this in our final certification as well. On Telstra project this would involve issuing of F20

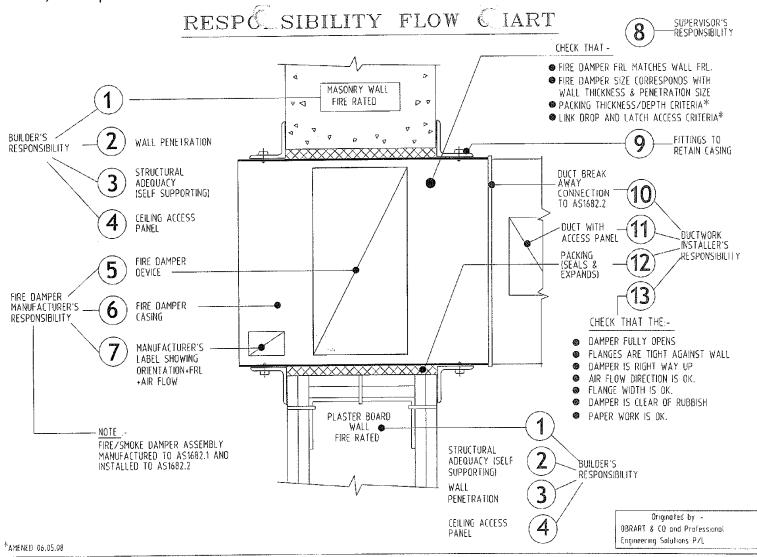
All we can do is our best by obtaining wall construction certificate by the installer, or person cutting the hole, be vigilant in our checking of their works and this will be minimise the likelihood of any problems.

When do we install the fire damper? The fire damper is installed after the wall is completed, as per the manufactures details.

Who signs Firedampers off? The person signing off on the fire damper is usually the person who installed the damper, as again the person must be deemed competent by training or knowledge to meet the requirements of AS1668 Part 1.2012 & AS1682 Parts 1 & 2. 1991.qualified The installed must sign off on the installation of each damper, however as they are working for us, and we are providing the final sign off and certification of the installation then we have a responsibility to check the installation as well. If some instances you may want to get a third party specialist (such as Bowsers) to attend site and carry out inspection and sign off (this will cost \$\$\$\$, depending on number to be signed off)

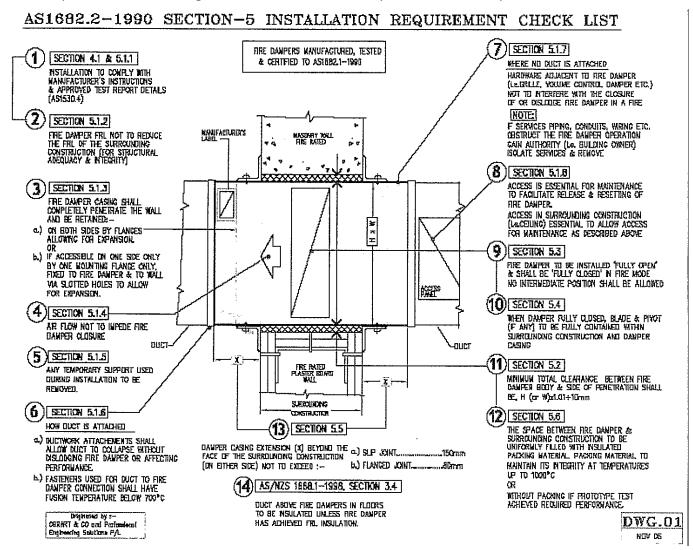
Why you don't certify firedamper installation.

Below is sketch which indicates responsibilities for the various aspects of a fire damper installation, the obligations of the manufacturer, the responsibilities of the builder and of the installer



Why you don't certify firedamper installation.

Below is sketch which outlines 14 items that need to be checked off for EACH for damper installation to satisfy the requirements for AS1668.2. These requirements form the general basis of our Firedamper Installation Inspection Sheet, Form RW-COMM-15.



The quality is not great but you will get the idea. This is from the AMCA fire damper course but you get the idea

Fire Damper installation Records & Details.

Labelling of Firedampers

Once satisfied with the installation of fire dampers (receipt of builders wall sign off and installation contractor certification letter and completed Installation Checklist (Form RW-COMM-015) each fire damper needs to be labelled.

RYAN © © © O WILKS PIP LID medalatified bullatic for ordinals. The
Fire Damper Installation
FD Ref:
This sticker certifies that this fire damper has been checked and is deemed to meet the requirements for Fire Dampers installation as outlined in AS 1668 Part 1. 2012, AS1682 Part 1 & 2 $-$ 1991.
I confirm that I am competent by knowledge and training to sign off this installation.
Name:
Company:
Signature: Date:
Minimum fire dampers to be re-inspected every 5 years.

An example of Ryan Wilks fire damper installation label is opposite.

In general the label is fitted under the firedamper on the wall, near the access panel. Labels are not fitted to access panel doors, fire damper angles or any part that can be removed

Where fire dampers are located behind false ceilings then an additional smaller traffolyte label should be fitted to the ceiling grid under, or the access panel under the damper to indicate that is located above , i.e FD 2 behind

After fitting labels to each firedamper you should then take a photo of the final installation. This photo can then be used, along with the progressive installation photos to support our certification now, and to minimise likelihood of any future certification issues.

In the unlikely event that there is a dispute in one or a few years time when someone has removed flanges and not put them back, moved a wall or installed new services as part of some future fitout these will be a record that at the time of handover the installation was complete. Don't think this doesn't happen, there is 7 year warranty on building works

Project Certification; Certification of Fire Dampers

The sign off of fire dampers forms part of the essential fire safety measures for any building, be it the original occupation certificate or annual fire certification.

Fire dampers are governed by requirements of BCA and Australian Standards.

As we have indicated in this presentation you as an individual are not deemed competent to sign off on the fire dampers but at the end of the project we Ryan Wilks must provide this certification.

This Ryan Wilks certification will be possible by the receipt of the manufacturers sign off and test report, the by wall constructors certification, the installation contractors certification, the completion of installation checklist, the photo records of each damper and the marked up as installed drawings.

In addition any non compliances must be identified in the certification, and why as well as any correspondence, instructions from the client of certifier with respect to non compliance or instructions to modify or alter works must be included.

It is important that all of these records are obtained, and that they are filed for easy reference (ie. Photo will need labels).

Our Ryan Wilks certification will reference theses these third party sign offs and include them as attachments.

The certification requirements are generally outlined in the Project Fire Safety Schedule, or DA/BA. For Tesltra projects this should be included on F02, but these are rarely issued and we usually be provided at the end of the project on Telstra F04 or F08. These documents will nominate specific clauses of BCA and AS/NZS to be referenced in final certification

Ryan Wilks Certification will include reference to all applicable design drawings and certification to applicable BCA clauses and Australian Standards, who completed those works and copies of each installers certification and supporting documents.

Suppliers Copies of manufacturers sign off and copy of test certificate and report for each type of fire damper supplied. This will include reference to manufactured as per AS

Builder; Certification letter referencing the design drawings and specification, advice that the structures have been constructed to these documents and relevant FRL ratings and that construction is as per the manufactures instructions

Sheetmetal Contractor (Installer): Will provide installation certificate letter which includes reference to applicable

standards& BCA clauses. It should also include the experience of the person who is certifying the works and reference that they competent by knowledge and training to provide sign off of this installation.

Our final certification document will be quiet large. Examples of recent certifications are located in Project Proforma folder under Firedampers, link is P:\Projects\5. Project Proforma\Fire Dampers\Certification Examples.

Many of these principles will be applicable to other certification and sign offs such as cable penetrations

BCA & Australian Standard Sign offs required in general are

- AS1682.1 (1990) Firedampers specification
- AS 1682.2 (1990 Firedamper Installation
- AS 1851.6 (1997) Maintenance of smoke and fire control features of HVAC systems
- AS4072.1 (2005) Service Penetrations
- AS1530.4 (2005) Testing Fire Restistance elements of building composition.
- AS4254 (1995) Ductwork for Air handling systems in buildings.

The following are examples of our general sign off. The notes in blue are typical clarifications that we have made to suit the particular site;

The mechanical installation complies with the current general requirements of,

- Mechanical Ventilation comply with Part J5 of the BCA.
- The use of ventilation and air-conditioning in buildings-Fire & Smoke control in compartment buildings complies with Australian Standard 1668.1. (a/c Plant continues to operate in general firetrip, manual override switch provided at the FIP as per design)
- The use of Ventilation and air-conditioning in buildings Mechanical ventilation in buildings complies with Australian Standard 1668.2. (as outlined the design documents)
- Mechanical Ventilation for acceptable indoor air quality complies with Australian Standard AS 1668.2 (as outlined in design documents)
- Mechanical Ductwork comply with Australian Standard AS 1668.2.based on the above noted design documentation. The mechanical ductwork also complies with the requirements of BCA C1.10.5 Air Handling Ductwork and fire hazard properties of set out is AS 4254
- Installation complies with Part J3.5 of the BCA (2011) Sealing (new a/c unit fitted with shut off dampers. The new mechanical plant installation is sealed. The exchange is an existing building, we can not provide certification for existing building or mechanical services and openings)
- Fire dampers have been installed in accordance with requirements of AS 1682.1 (1998) and as per suppliers installation instructions
- Installation complies with Part J8.2 of the BCA (2011) Access for Maintenance

The fire stopping installation complies with the current requirements of:

- Australian Standard AS 1530.4 2005, Test procedures for fire resistance of elements used in building construction (compliance with this Standard of materials used).
- Australian Standard AS 4072.1 2005, Components for the protection of openings in fire-resistant separating elements Service
 penetrations and control joints.
- Australian Standard AS 1682. Part 1 & Part 2 1990, Floors adequately Fire Dampered & Fire Collared with a proprietary system, in accordance with Clauses C3.13 and C3.15
- Australian Standard AS 1668.1 1998, Construction and installation criteria for mechanical fire dampers
- BCA 2011/12, Specification C3.15 Specification C3.15 (Penetrations of Walls, Floors and Ceilings by Services)

Firedampers for Beginners – what not to do

Examples found on some of our recent projects (no not our problems);



Looks ok on outside investigation revealed that whilst penetration is trimmed the side stud does not continue down to bottom track, non compliance

Bottom angle not fixed to wall, side angle is not twice as wide as the gap. Also found no packing on fire damper.



No angles on damper on inside face, couldn't have been as label is fixed to damper case



Hope there is access on the other side, certainly no access to this fire damper, and no access panels on the other two ducts above



Firedampers for Beginners – what not to do

Examples of bad installations, or issues that won't allow dampers to operate correctly in the event of a fire





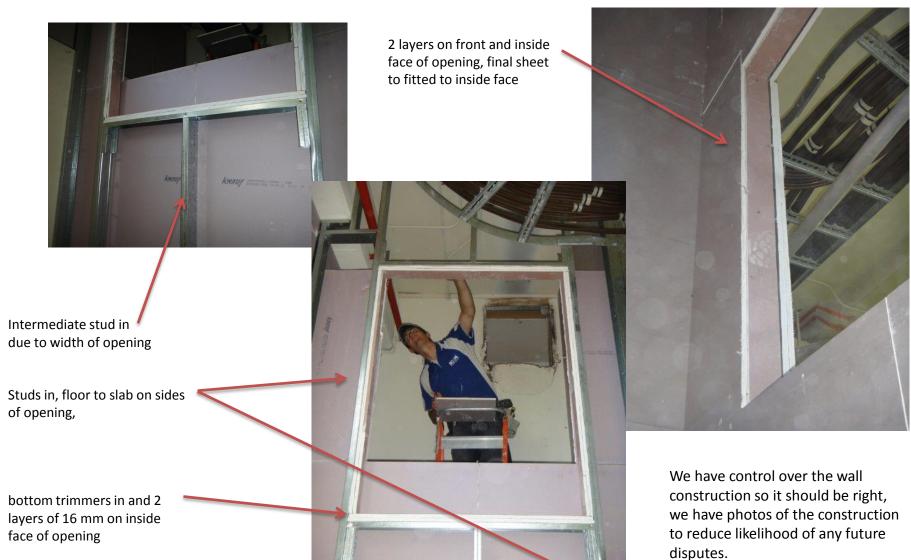




Pretty safe to say that these cables and brackets would not have been in the orignal installation.

Firedampers for Beginners – what we should be doing

The following photos indicate the construction of new fire rated wall and opening for fire dampers at Newtown TE



Firedampers for Beginners – what we should be doing

As mentioned we need to observe and document the fire damper installation process, this will provide valuable records for any future disputes. A few examples are shown below;



Insulation material fitted



Insulation material fitted, angles being bolted on flush to wall



Dampers sections bolted together, edge of penetration repaired, angles being bolted on, twice the gap



Bottom sill repaired prior to install



Angels on, hard to wall

Firedampers for Beginners – Break away joints

Ryan Wilks recently completed fire damper repair at Kent Street.

The photo opposite shows the most typical repair that is required, the break away joint. The fire damper has to be installed and fixed into the wall, it becomes part of the integrity of wall.

In a fire situation the ductwork is meant to break away, fall free of the damper so as to not put any strain on the damper and pull the damper out o the wall



You can see here there is an unpainted duct sleeve. This end of the duct is slipped under the fire damper flanges (up to the bolts. This holds the duct in place.

The other end of the duct is flanged and connects to the main duct run with plastic nuts and bolts. Plastic clips (not installed as yet) ar then fitted on the top and sides. This is the break away joint, in a fire the plastic melts allowing the main duct to seperate from the damper

The fixing flanges are mounted hard to the wall and there are no bolts missing – good.

The width of the angle on the wall needs to be twice the gap between the damper case and the wall

The bad part of this installation is where this duct was cut back to fit the new sleeve. The flange can be tek screwed on but from the outside in, not inside out. The screw heads pose a scratching risk to hands and clothes – not good practice, pretty rough

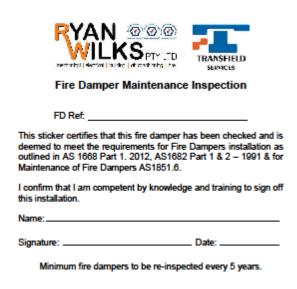
Firedampers for Beginners – Annual Certification of Firedampers

You may recall that earlier in the presentation reference as made to annual certification of firedampers, 20 % to be inspected every year so that all dampers are inspected over a 5 year period.

This inspection involves physically testing the operation of the damper by removing the access panel, dropping the fire damper curtain, blade, checking it closes and then re-opening and re-instating the thermal link (all through the access panel) The fixing angles are then removed to check that the damper in position, packing material is in place and the surrounding wall is still intact. In short there are 12 major checks to be carried out on each damper.

This is something that we do not normally get involved with, (which is a good thing) <u>however</u> the principles of annual certification checks need to be applied to any existing fire dampers that comes part of, or incorporated into our works. At this point we become responsible for the compliance of this damper.

It is highly likely, based on past experiences that there will be many of these existing dampers that will not comply for one reason or another.



As indicated previously we need to inspect there dampers and notify client of any non compliance issues and await instruction on how to proceed.

The maintenance inspection is carried out using our form RW-COMM-16. Again this inspection needs to be carried out by the sheetmetal installer, with you along making notes and taking photos.

Firedampers that pass are to be fitted with a Maintenance inspection label similar to the one opposite.

If dampers can not be repaired, or we are instructed not to repair them then this needs to be recorded. This should be done using sheet like Fire Damper Summary sheet located in the Firedamper folder, this forms allows you to identify which area are non complaint. Remember it only takes one non compliance item and a damper can not be certified..

Firedampers for Beginners – Annual Maintenance Inspection

Below is copy of the maintenance inspection checklist. On the back of the form are a list of the tests and checks that need to be completed.

We ticks in all boxes, otherwise we can not certify the damper

ASSESSMENT OF ESSENTIAL FIRE SAFETY MEASURES

RYAN	(O) (O) (O)
WILK	SPTYLTD
mechanical electrical building	air conditioning fire
1300 34	0 124

Year of Inspection	Year 1	Year 2	Year 3	Year 4	Year 5
Fire damper inspected by/date					
Structure Inspected by / date					
Approved by / date					

INSPECTION RECORD FIRE DAMPER MAINTENANCE

roject	Name:								Job No:					Date:							Form N	0: RW
roject	Address:								Level, Ar	ea:				Inspection	by:						Project	Ref.
Fire Damper No	Damper Size	Wall (W) Slab (8) Thickness	FFL Req'd	Access Compliant	FLR Correct to Wall or Slab.	Damper Blade aligned to Structure	Damper Flangers Fixed Correctly	Peno size correct & Packing OK	Damper Condition Corrision Rust	Fusible link Installed (degree C)	Airway clear/ clean	Blade closes with air flow	Pass / Fall Blade Drop Test	Integity of Surrounding Structure Satisfactory		Pass or Fall		Yes	ar of	,		
																	1	2	3 4	5		
1	600 x 600	W-200	2 hr								Yes											
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	te out as applicable																			Ш		
	The following inform	nation was p	rovided by	y the buildir	ig owner t	o assists w	Ith the cert	fication of	the above	dampers:	(circle s	upplied, cr	ross out not	supplied)								
	Original Fire dampe	er Installation	certificat		damper o	ietalls and	test certific	ate	FRL		Wall cor	struction	sign off		Coples of	existing	man	inten	ance	record	s N	
e 2	This assessment is	based on th	e assump	tion that the	e original 1	ire damper	s and Insta	llation met	hods were	compatible	with the	FRL of the	e surroundir	ng fire restant	structure a	nd com	plied	with	the s	tandar	ds applica	
	original Installation	as well as m	anufature	r's special i	nstruction	s, where ap	plicable															
	Wall or floor to be I																					
ote 4	Theses fire damper		-																			
	completed to the w	all and or da	mper to b	ring them to	complian	ce levels. F	or details	of dampers	and wall o	onstruction	upon wi	nich certifi	cation is ba	sed refer to F	ire Damper	Compla	ince	Crite	ria F	orm (C	OMM-17	
	arried out all necessa											Name:							С	ompa	ny: Rya	
	nents for maintenace ige and training to sig				1682 Part	1 a 2 - 199	1 and AS1	851.6. I COI	mrm that i	am compe		Date							_	ignatu		

P:\Projects\6. Project Commissioning Documents\Mechanica\Commissioning Test Sheets\RW-MCOM-16 Fire Damper Maintenance Inspection Sheet - draft

FIRE DAMPER MAINTENANCE CHECKLIST

(Based or Clauses 5.8 A) | A5 1382.2 | 1991.8 Sel (hin 3 of A5 1851.3 | 1597)

II FOLLOW THE WARTTEN INSTRUCTIONS AND LOOK FOR SPECIALS

- 1.1 Fead Alegra on Standard AS 1982.2 and ensure that it is understood.
- 1.2 Feed Absurator Standard AAS1851-2005 & AS 1851.64.997. Ensure that you onderstand then
- 1.3. Check the Operating and Maintenance manuals for any special installation details, approve in ill stems tions
- 1.4. Check that there is a schedule or drawing showing all the fire damages in the building, and there Swear insaction

2] IF YOU HAVE EVEIDENCE OF SATISFACTORY INSTALLATION-THEN DETAILS TO BE CHECKED DURING MAINTENACE INSPACTION ARE:

- 2.1 Access is leguired for maintensince and or release, is there access, is the access sufficient to access the damper linkage
- 2.3 Has concision of caping , blades or in rage rendered the fire damper inefficient?
- 2.4 There must be NO cost nutrions preventing docure. Glavity and aid own ust not be more disturble fire.
- 2.5. The fire Damper hade should be fully open, and as else be fully possessment the fusible link premoved. Con the fusible invite reser after testing ? You need to release and test curtain drops disect and re-instate curtain and fusials in congression.
- 2.5. There should be destance all-rooms the casing for expension, has this been interfered with:
- 2.7 Is there althreak away yout?

3 IF YOU HAVE EVEIDENCE OF SATISFACTORY INSTALLATION-THEN DETAILS TO BE CHECKED DURING MAINTENACE INSPACTION APE:

- 3.1 Does the penetration in the flie resistant wall on slab comply with the wall or slab manufacturers instructions?
- 3.2 Check that the fire camper is spelled, and that the label information suffulling installation, (Sometimes the label is hide-ratio the wall to other or trafferonce during a single
- 3.3. The fire damper must not reduce the fire resistance of the surround structure.
- 3.4. Connection between the spational fire damper most allow the document of collaborative out disording the fire damper or otherwise effecting its our often (a reak sway joint required).
- 3.5. The line deniuer casing intist ally per enace the structure in which it is installed
- 3.6 . The fire damped must be retained on anth sides of the wall or floor by florges, \underline{m} is must be retained on an accessible side by <u>one</u> morning flange with slotted holes.
- 3.7. Betaining angles must be both of diagons tithe face of the five research procedure and fixed to the five damper
- 3.3 The mounting flanges should cover <u>twice</u> the space between the damper and the penetration
- -3.3. The space between the damper case and the surround penetration (wall or floor) must be cabled with surable packing material to" prevent the free flow or combustion products".
- 3.10 There should be dearance all-round for expansion
- 3.11 When closed the fire camper blade and divot (in any) one libe forly contained within surround structure
- -3.12 The fire damper casing should protrude not more than 150 mm beyond the wall for floor) for slip torrt, or 30 mm begond war (or floor) for florged joints.
- 3.13 Methanica T is dan persishal be inted with temperature sensitive load ϵ links
- 3.14 Unless fire camber modes the FRU instraction criteria, ductive is prove floor mounted floor dampers must be insulated or endused in masonic (refer AS 1558.1).

Takan your fire damper inspection are conneces to be premed connected thy knowledge and relining to composit inspections and to sign of on malificenatice inspections.

This information is based upon information precared by 6th Sinton Hill prepared for AMCA educational seminar file & Smake Campers

There are a number of tools that have been developed for installation and inspection of fire dampers, these are;

Fire Damper Schedule

P:\Projects\5. Project Proforma\Project Folder Template - Server\N03200\L - Technical\Master Damper Schedule.xls

Fire Damper Installation Checklist

P:\Projects\6. Project Commissioning Documents\Mechanical\Commissioning Test Sheets\RW-MCOM-15 Fire Damper Installation Inspection Record - Draft.xlsx

Fire Damper Installation Maintenance Checklist

P:\Projects\6. Project Commissioning Documents\Mechanical\Commissioning Test Sheets\RW-MCOM-16 Fire Damper Maintenance Inspection Sheet - draft.xlsx

Fire Damper Installation Maintenance Compliance Criteria

P:\Projects\6. Project Commissioning Documents\Mechanical\Commissioning Test Sheets\RW-MCOM-17 Fire Damper Maintenance Compliance Criteria - draft.xls

Typical subbie installation certificate has been drafted;

P:\Projects\6. Project Commissioning Documents\Mechanical\Commissioning Test Sheets\RW-MCOM-18 Contractor Mechanical installation Certificate.doc

Firedamper ICR's (Installation Form M044, Decommissioning M045 & Recommissioning & Certification M046) P:\ITP's & ICR's\ICR's\ICR's\3. Mechanical - ICR's - updated 03.06.14.docx

Fire damper labels, (templates)

P:\Projects\5. Project Proforma\Fire Dampers\Fire Damper Labels

In addition there are a number of examples of suppliers documents and certification letters and other relevant fire damper information located in the Project folder, these being;

Project Proforma / Fire Dampers

P:\Projects\5. Project Proforma\Fire Dampers

For documents and information relating to maintenance or annual checking of firedampers refer to Kent Street Fire damper Rectification and Repairs, project folder and documents;

P:\Projects\2. NSW Projects\N03501 - N03600\N03568 - Kent St TE - Essential Services Fire Dampers - Transfield

Additional information regarding this topic can be found at the following links;

Boral;

The following link will take you to Boral website where there area number of different types of fire rated constructions.

http://www.boral.com.au/brochures/ordering/default.asp?site=boral&company=Plasterboard&product=plasterboard&subsite=&category=73&c_name=Systems - Fire Rated&list=0&scr=1

CSR - Red Book

The following links will get you to the Red Book "bible" for wall construction

http://www.gyprock.com.au/Pages/resources/red-book.aspx

P:\Projects\5. Project Proforma\Fire Rating Design Guide CSR\GYPROCK-500-Red Book-2011.pdf

Riley Air Control, information on dampers;

http://www.rileyair.com.au/services.asp

Bullocks, damper details, typical installation details. There is a lot of good information on this site.

http://www.bullockmfg.com.au/dampers/Model%204900%20Curtain%20Fire%20Damper.html

http://www.bullockmfg.com.au/installation%20instructions/Model%205000%20-%204900%20-

%205650%20Install%20Plasterboard%20Steel%20Stud.pdf

Cellmec, again more good information here;

http://brochures.celmec.net/celmec_fire_dampers-comau/#/10/

Lorient, Intumescent Firedampers (there are a number of intumescent suppliers, just check web) http://www.fyreguard.com/pdf/kilargo ifd brochure jan2013.pdf

ANY QUESTIONS



Thanks you for your attention Please complete training acknowledgement form (Form WHSF-037) before leaving.