



**chemical  
products**  
insulation solutions

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## ASSEMBLY INSTRUCTION № CP-002/2010/08

of fire protection insulation system **ISOLSTOP FIRE 60 System**, developed for circle horizontal and vertical air-ducts for heating, ventilation and air-conditioning (HVAC).

### 1. INTRODUCTION

The insulation system for fire protection of circle – horizontal and vertical air-ducts with fire resistance of minimum 60 minutes, produced by Chemical products Ltd. is a single-layer insulation of mineral stone wool lamella mat faced with aluminum foil **ISOLLAM 60** with density 60 kg/m<sup>3</sup> and thickness 40 mm.

### 2. INSTALLATION OF THE AIR-DUCT

Smooth or spiral steel HVAC ducts for fire protection must be made to ensure maximum tightness. Fire resistant sealing tape and sealant resistant to +600 ° C is necessary to be put between the flanges. Flanges are firmly fixed with a minimum of 6 pcs. screws per meter at each joint. Penetration of ducts through fire zones walls (ceilings) and their free ends must be reinforced with steel cross fittings.

The opening between the duct and the floor or roof is closed with slabs of mineral wool with density 150 kg/m<sup>3</sup>. Both sides of the penetration are covered with lamella mat collars faced with aluminum foil **ISOLLAM 60 AL**, production of Chemical products Ltd., with density 60 kg, 40 mm thickness and 150 mm width. Closed ends of ducts with nominal internal dimensions of 500 mm and more complete with a flange.

### 3. CUTTING OF LAMELLA MAT **ISOLLAM 60 AL**

Mineral stone wool lamella mat faced with aluminium foil **ISOLLAM 60 AL** is cut as per the size of the circle duct.

### 4. ASSEMBLY OF THE FIRERESISTANT INSULATION SYSTEM

It is necessary to press down the lamella mats **ISOLLAM 60 AL** to one another during installation in order to avoid formation of gaps. The connection of both ends of the lamella mat is done through overlapping of 100 mm reinforced aluminium foil which is achieved by removal of one or few lamellas in the end of the insulation mat. The joint is fixed by pins.

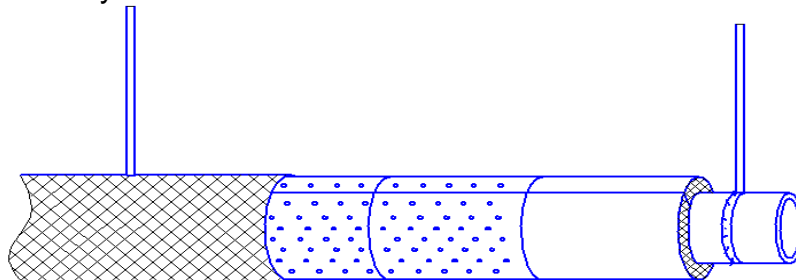
The insulation is attached to the HVAC duct by 11-16 pcs/ m<sup>2</sup> welding pins (preferably insulated). The pins are fixed in 210 mm across the pipeline and in the 300 mm along the pipeline. The joints of the insulation mat and its free ends are glued together with one-sided adhesive reinforced (ALS) or not reinforced (ALU) aluminum tape.

In all cases, it is required to implement the following principles: maximum distance between the pins (nails) and the ends of the duct and the insulation mat end should be up to 100 mm, and the greatest possible distance between pins is 300 mm.

Note: The joints of the separate lamella mats should be out of the area of the duct flanges.

### 5. FINISHING PROCESSING OF THE FIRE RESISTANCE SYSTEM

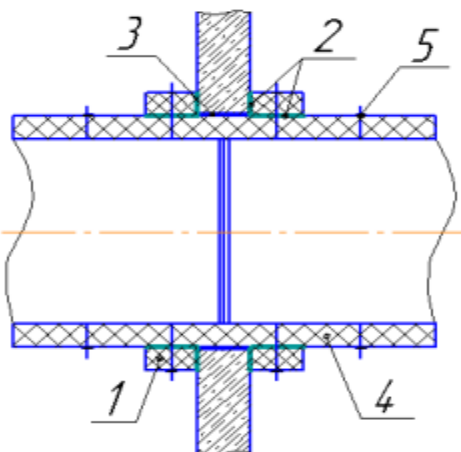
The insulation of circle horizontal and vertical air-duct should be reinforced with hexagonal steel mesh that is fixed the same way as the insulation itself. In that case the quantity of 11-16 pcs/m<sup>2</sup> pins (nails) for fixation of the insulation and the reinforced steel mesh is enough. The total quantity of welding pins is distributed evenly between the fixation of the insulation and the mesh. Insulation could be covered with aluminum or galvanized steel which does not reduce the fire resistance of the system.



### 6. PENETRATION THROUGH WALLS

The penetration of air-ducts through fire zones of walls (ceilings) and their free ends should be reinforced by crossed steel fittings.

In the penetration zone the gaps between the walls and air-duct are covered with 150 kg/m<sup>3</sup> mineral wool reinforced with a special 150 mm wide collar made from mineral stone wool lamella mat **ISOLLAM 60 AL**.



1. Mineral wool ISOLLAM 60 AL
2. Conlit glue
3. Partition wall
4. Mineral wool ИЗОЛЛАМ 60 AL
5. Welding pin with a washer

### 7. FIRE RESISTANCE

The system **ISOLSTOP FIRE 60** for minimum of 60 minutes fire resistance is developed on the basis of mineral stone wool 60 kg/m<sup>3</sup>, with 40mm thickness, fire reaction class **A1**.

Item	№	Description – characteristics	Unit
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<b>Air duct</b>	<b>1</b>	Maximum diameter of the air duct	mm	1,000
	<b>2</b>	Joints at duct flanges	--	Through nails
	<b>3</b>	Maximum length between joining nails of air-duct flanges.	mm	167
	<b>4</b>	Minimum covering of the insulation over the flanges	mm	30
	<b>5</b>	Sealing of the flanges with fire resistant mastic +600 °C	--	Mandatory
<b>Insulation</b>	<b>1</b>	Thickness of ISOLLAM 60 AL	mm	40
	<b>2</b>	Number of insulation layers		1
	<b>3</b>	The ends of the insulation mats are glued with ALU (ALS) foil		Mandatory
<b>Insulation fixing</b>		Welding pins with washers		
	<b>1</b>	Maximum length; longitudinal across	mm mm	300 210
	<b>2</b>	Maximum length from the air-duct and the ends of the insulation – obligatory size	mm	100
	<b>3</b>	Wired mesh (with 25 mm holes)		Mandatory
	<b>4</b>	Minimum number of welding pins with washers	pcs/ m2	11-16
<b>Penetration</b>		Penetration through fire protection zone – bilateral sealing collar		Mandatory
	<b>1</b>	Thickness of ISOLLAM 60 AL	mm	40
	<b>2</b>	Width of the insulation collar around the perimeter	mm	150
	<b>3</b>	Maximum length of welded pins in the sealing collar	mm	250
	<b>4</b>	Insert cross steal fitting into the air duct	--	Mandatory

The information in the present instruction describes the characteristics of the system produced by the materials listed above and strict compliance with all indicated sizes.

Chemical products Ltd. ensures fire resistance of the rectangular horizontal and vertical air-ducts only in strict compliance with the present instruction.

Installation is carried out under the supervision of professionally trained representative of Chemical products Ltd.

## DECLARATION

The undersigned, .....  
(name, surname, family name)

in my capacity of .....  
(position of the person that signs the declaration)

of ..... (name of the legal entity)

**DECLARE,**

that together with the delivery of the System ISOLSTOP FIRE 60 I received instruction № CP-002/2010/08 and I am acquainted with it.

**Date:** .....

**Signature:** .....

(stamp)