

CASE STUDY

OF

**THE COMPARATIVE PHYSICAL
HANDLING QUALITIES OF
RECOVERY INSULATION AND
ROCKWOOL**

TO

**A 1930s SEMI-DETACHED HOUSE IN
SHEFFIELD**

By

David Firth

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Introduction

1.1. This case study describes the installation of roof insulation to a 1930s semi-detached house in Sheffield, using a combination of Recovery Insulation and Rockwool.

1.2. The house owner had moved into the house in October 2003 and discovered that the house was inadequately heated and insulated. Heating was fed from a gas-fired boiler in the attached garage, the house was single-glazed and there was no cavity wall insulation or draught-stripping to doors and windows. The roof space was insulated with 25mm of fibreglass.

1.3. The study compares the physical handling qualities of the two insulating materials used and the ease of installation.

2. The Installation

2.1. The installers of the existing fibreglass insulation had not provided enough material to cover the whole area and the part of the roof space that was not visible from a head and shoulders inspection at the loft hatch was not insulated at all. Small gaps between edge joists and walls were not filled and at eaves positions and no care had been taken to fill the edges of the roof.

2.2. The current Building Regulations recommends a total insulation thickness between 161mm and 338mm.¹ There was not enough Recovery insulation to cover the whole area with Recovery Insulation to a reasonable thickness and so additional insulation was bought. A local DIY store had a “3 for 2” promotion on rolls of 100mm thick Rockwool and so this was used.

2.3. The existing fibreglass was laid between the rafters and was left in place. It was decided to lay the Rockwool insulation directly on top of the existing fibreglass insulation and cover the whole roof with one layer of Recovery Insulation laid across the joists at right angles.

3. Carrying the insulation into the roof space

4. The Rockwool was packaged neatly in twin rolls which were easy to carry through the loft hatch into the roof space. Once in the roof space it was easy to cut open the plastic wrapping and roll out the insulation.
5. The Recovery Insulation was in loose rolls approximately 10m long. Due to the bulkiness and weight it was necessary to take measurements in the roof space and cut the insulation to the required lengths before taking into the loft.

6. Laying the insulation

6.1. Rockwool

¹ Approved Document L1, Conservation of fuel and power in dwellings

- 6.1.1. Installing Rockwool requires wearing suitable ppe (personal protective equipment) to protect against the inhalation of loose fibres and skin irritation. This meant wearing a close-fitting face mask and overalls with elasticated cuffs and ankles. Despite an outside temperature of 4⁰C the installer was soon sweating and very uncomfortable.
- 6.1.2. The Rockwool cuts very easily with a Stanley knife, it is not necessary to cut all the way through the insulation and the last part can be torn by hand.
- 6.1.3. Rockwool easily compresses into small spaces if cut too large.
- 6.1.4. It tears easily if accidentally caught on sharp edges or if trying to pull and tug long lengths into position. This meant that the installer had to move within arms length of the rockwool to adjust it's position.

6.2. Recovery Insulation

- 6.2.1. Installing Recovery Insulation does not require wearing ppe but because fibreglass and Rockwool were present it was necessary to continue to wear mask and overalls.
- 6.2.2. The Recovery Insulation was not as easy to cut as the Rockwool and the Stanley knife blades very quickly became blunt.
- 6.2.3. It was necessary to cut through the insulation completely and could not be torn by hand at all.
- 6.2.4. Where cutting to fit around timbers and into small spaces it was necessary to measure and cut accurately because the material does not easily compress.
- 6.2.5. It was relatively easy to roll out lengths of 3-5m and then pull and tug to adjust to line up with adjacent rolls without tearing. This meant that the installer could make fewer movements in order to adjust the position and fewer movements of temporary boards to stand on.

7. Conclusions

- 7.1. Rockwool is much easier to cut and shape than Recovery Insulation.
- 7.2. Recovery Insulation has more tensile strength and will withstand rough handling.
- 7.3. Rockwool requires the use of ppe, Recovery Insulation does not.
- 7.4. Fewer physical movements are required to install and adjust Recovery Insulation due it's higher tensile strength.
- 7.5. Although the price for the Recovery Insulation was not determined at the time of this study it is likely to be approximately three times the cost of rockwool.

8. Recommendations for further study

- 8.1. This study was limited to a comparison of the physical handling properties of Rockwool and Recovery Insulation. Further studies should be undertaken to examine:
- 8.1.1. the difference in the physical handling properties and ease of installation between Recovery Insulation and other commonly used insulating materials in roof space installations
 - 8.1.2. the difference in physical handling properties of Recovery Insulation and other commonly used insulating materials installed in cavity walls and under floors in new construction projects
 - 8.1.3. the difference in financial cost
 - 8.1.4. the difference in environmental life-cycle costs
 - 8.1.5. the comparative insulating qualities of Recovery Insulation and other commonly used materials including Rockwool
 - 8.1.6. the potential for increased DIY use of Recovery Insulation due to the non-harmful effects of handling and use²

² Although not readily evident from this study, the fact that there were patches of missing insulation which were out of site of the roof space hatch is evidence of poor workmanship. The author has more than 20 years experience of working in similar houses and this is commonly found. Novice or disreputable insulation installers frequently take short cuts when installing insulation in the knowledge that some home-owners are unlikely, if ever, to look in the roof space. If the cost of paying someone to install the insulation is taken out, and the benefits of knowing the insulation has been installed correctly added in, there is likely to be a very positive overall difference in favour of DIY installations of Recovery Insulation.



Photo 1. Existing fibreglass insulation was missing to a large area. This was not visible from a head and shoulders inspection of the roof space. Note fibres in air caught by camera flash.



Photo 2. Edges of roof space not insulated.



Photo 3. Recovery Insulation laid at right angles to joists above Rockwool.