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## Acoustic Assessment

**RLA Polymers Aftek Fyreflex Sealant  
PKA-A106**

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**Project 214 046**

**March 2014**

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File : 214 046 R01 v1-0 PKA-A106 Acoustic Assessment

*Prepared For*  
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## Document Information

File: 214 046 R01 v1-0 PKA-A106 Acoustic Assessment

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**Revision:** 1.0

**Distribution:**

Date	Copies	Version	To:	By:
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**This firm is a member of the Association of Australian Acoustical Consultants.**

**The work reported herein has been carried out in accordance with the terms of membership. We stress that the advice given herein is for acoustic purposes only, and that the relevant authorities should be consulted with regard to compliance with regulations governing areas other than acoustics.**

## **1 CLIENT**

Bruce Ryan  
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## **2 PRODUCT FOR ASSESSMENT**

RLA Polymers “Aftek Fyreflex” fire-rated acrylic sealant

## **3 PRODUCT DESCRIPTION**

RLA Polymers “Aftek Fyreflex” is a fire-rated, water based acrylic sealant which is used to cover internal and external expansion joints to provide a fire and acoustic seal.

## **4 CLIENT REQUEST**

To assess the potential acoustic performance of the Aftek Fyreflex when applied to various wall partitions, such as masonry walls, plasterboard walls etc.

## 5 INFORMATION ON WHICH THE ASSESSMENT IS BASED

For many years PKA Acoustic Consulting has been involved in both acoustic laboratory testing of sealants and field testing of sealants applied to various wall systems. PKA has also been involved in rectification works where we have recommended a sealant be applied to an installed partition to allow the partition to perform at the designed sound insulation rating.

Our experience has been that the acoustic performance of a sealant is governed by the:

- Specific gravity of the sealant
- Non-porosity of the sealant
- Quality of the workmanship when applying the sealant

Sealants also have a higher acoustic performance for their mass due to hysteresis losses within the body of the sealant. That is, it causes a phase change to the transmitted acoustic energy through the sealant. PKA have derived a formula that predicts the acoustic performance of the sealant based on the width and depth of the sealant together with the spacing apart of a double sealant application. This allows us to calculate the composite transmission loss for a wall system when sealant is applied.

PKA has also been involved in acoustic laboratory testing of various sealants to determine the sound insulation when applied in masonry, plasterboard and combined masonry and plasterboard wall systems. The results of the testing has allowed prediction of the acoustic performance providing the specific gravity of the sealant is known together with its ability to effectively seal the gap in question.

The following information has been provided by RLA Polymers in document *R6838 Product Data Sheet* dated November 2013:

- Specific Gravity – approximately 1.53
- Maximum Permissible Joint Movement -  $\pm 20\%$

A sample of the Aftek Fyreflex product was supplied to PKA's office to allow assessment.

The specific gravity of the sample cartridge was measured by PKA and was determined as 1.5 which agreed with the manufacturer's data.

## 6 ASSESSMENT

The following acoustic predictions are based on the sealant fully sealing across the gap in question with a maximum width of 20mm and a maximum depth of 10mm. For gaps larger than noted a backing rod is essential.

The RLA Polymers Aftek Fyreflex sealant will not degrade the acoustic performance of the following walls therefore the sound insulation ratings (Rw) stated will be retained when Aftek Fyreflex is used as a sealant.

Partition Description	Rw
110mm brick wall	45
220mm brick wall	55
200mm precast concrete panel	55
220mm brickwall with separate stud, plasterboard and cavity insulation	70

## 7 CONDITIONS

- This assessment refers to the expected laboratory performance of the product and systems
- The product must be installed according to the material manufacturer's instructions and be installed with good workmanship.
- The field installation may result in a lower acoustic performance mainly due to structural sound flanking commonly experienced on site. Special attention must be paid to both the airborne and structural borne paths to minimise the difference between the laboratory results and the actual field measurements.
- This assessment is only valid for a period of 5 Years from the date of issue.
- Any changes to the properties of the product materials used can invalidate this assessment. If changes are made then they should be checked for compliance.
- This assessment is on the acoustic performance only, and that relevant authorities should be consulted in regards to the aspects of structural, fire, durability and all other areas of the products' or systems' performance.

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