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Testing. Advising. Assuring.

Analysis of Expansion Joint for the Presence of Wax

A Report to: Emseal, LLC
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Report No.: 10-05-2662-1-2
3 Pages, 2 Appendices

Date: February 16, 2010

1.0 INTRODUCTION

An expansion joint, identified as Seismic Colorseal (COS), was submitted for characterization using Fourier transform infrared (FTIR) spectroscopy and differential scanning calorimetry (DSC) in an attempt to determine the presence of wax.

The sample was received, logged in and assigned sample number 10-05-A0043.

2.0 EXPERIMENTAL AND RESULTS

All raw data are referenced in Lab Book No. 12263.

2.1 FTIR

The analysis was carried out using a Nicolet 6700 Fourier transform infrared (FTIR) spectrometer (MII #A16201, calibration valid until 2010-03-30) and a Smart Orbit single reflection horizontal (HATR) accessory (Asset #16211), equipped with a diamond internal reflectance element. A computer-aided search was carried out on the generated spectrum.

Copies of the infrared spectrum and computer-aided search are shown in Appendix A. The infrared spectrum is shown in the full wavelength range of 4000 cm^{-1} to 500 cm^{-1} .

Spectrum #1 represents the sample and is generically identified (Search #1) as an acrylic based composition. The spectrum does not show any evidence of additional absorbance bands at 2915 cm^{-1} , 2848 cm^{-1} , 1463 cm^{-1} , 729 cm^{-1} and 719 cm^{-1} that could possibly be associated with the presence of wax.

2.2 DSC

Differential scanning calorimetry was carried out using a TA Instruments DSC Q1000 Differential Scanning Calorimeter (MII #A15228, calibration valid until 2010-02-07).

A portion of the sample was cut, accurately weighed and crimped into an aluminum pan for analysis. The sample was heated from ambient to 300°F at 18°F/min in a nitrogen atmosphere flowing at 50cc/min.


A copy of the DSC scan is attached in Appendix B.

Scan #1 represents the Seismic Colorseal (COS) sample. The DSC scan does not show any indication of low temperature melting endotherms that could possibly indicate the presence of wax.

3.0 CONCLUSIONS


Using both FTIR and DSC analyses wax was not detected in the submitted sample Seismic Colorseal (COS).

Reported by:



Susan Hannah
Technologist
Polymer Characterization

Reviewed and Authorized by:

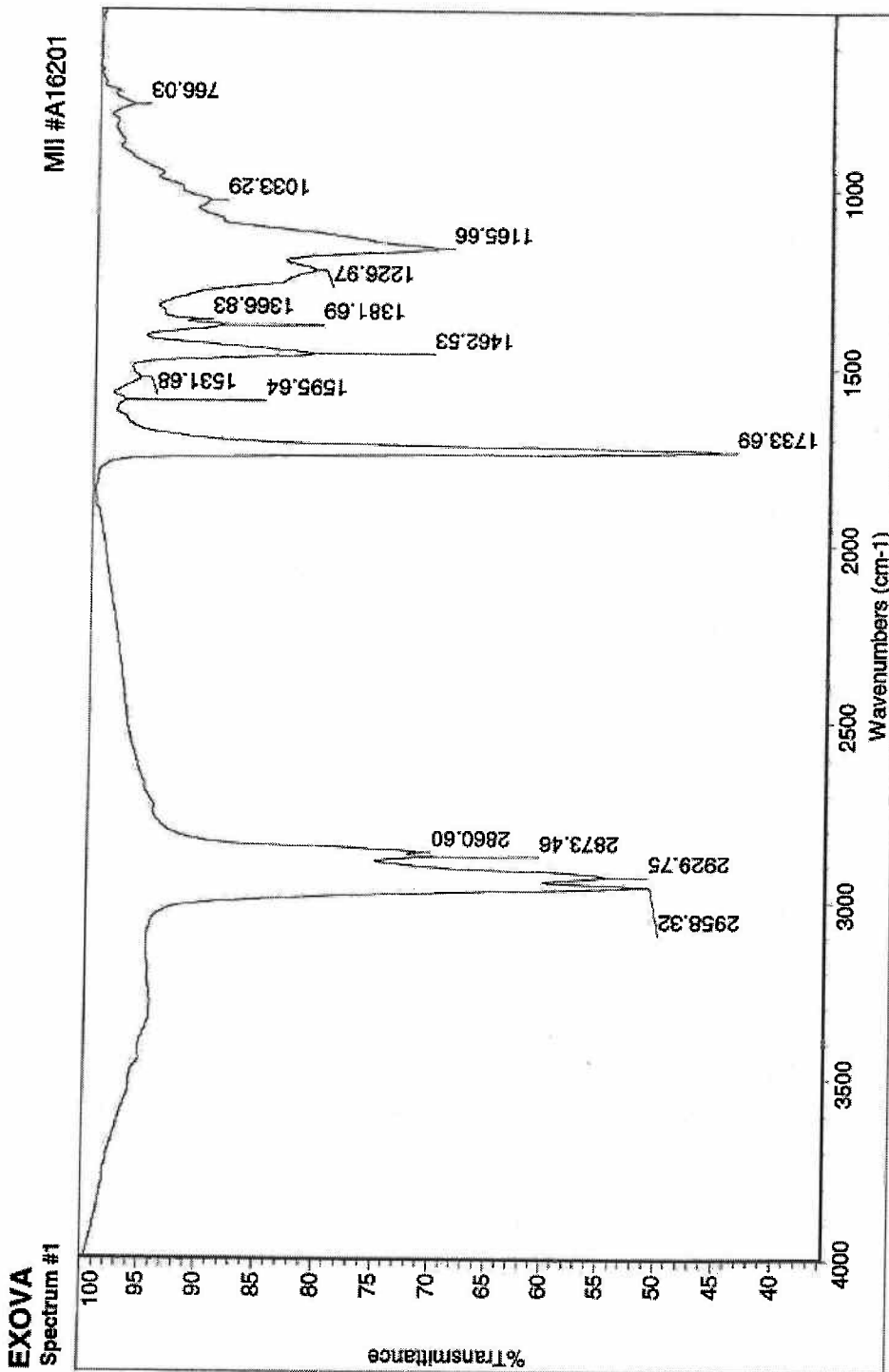


Bryan Wickson, B.Sc. Eng.
Manager
Polymer Characterization

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Appendix A

FTIR Spectrum and Computer-Aided Search
(2 pages)

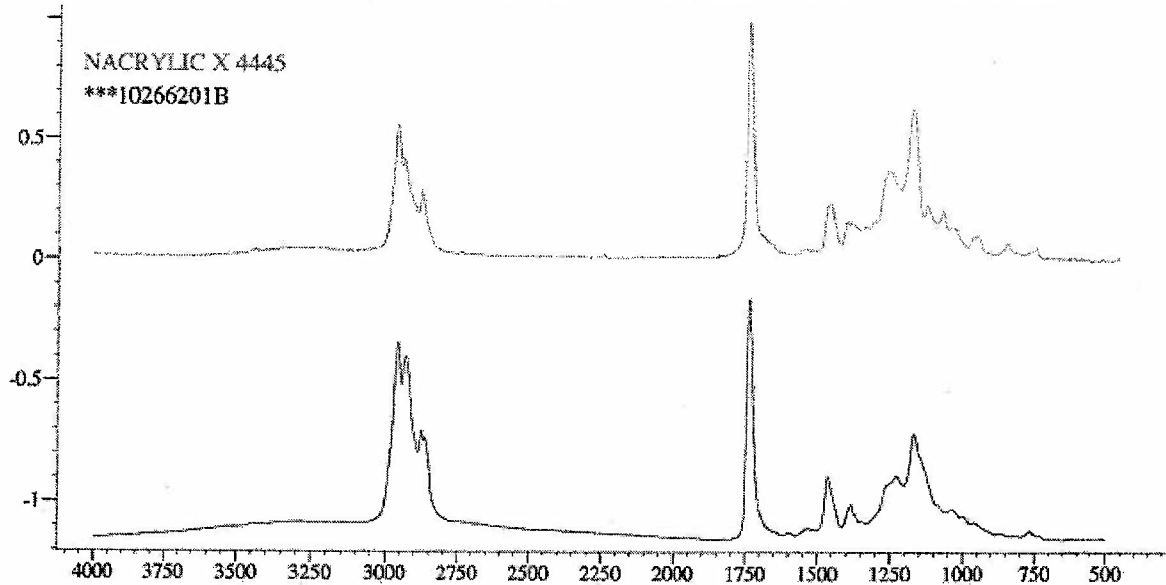


Collection time: Tue Jan 19 09:39:06 2010 (GMT-05:00)
Operator: *A. Church*
Date: *2010-02-11*

Filename: ***10266201B
Comments: 10-05-A0043 SEISMIC COLORSEAL (COS)

Search #1

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Name(s):	NACRYLIC X 4445
Technique:	FILM
Comments:	Chemical Description= SELF REACTIVE ACRYLIC COPOLYMER
Content:	Solids Content= 45%
Solution Data:	pH= 3.0
Source Of Sample:	NATIONAL STARCH AND CHEMICAL CORPORATION
Viscosity Data:	(Brookfield)= 100 CPS
Weight:	8.5 LBS

Appendix B

DSC Scan
(1 page)

File: C:\TAIData\2010\DSC\WF\10266201B.001
Operator: S.V.HANNAH
Run Date: 19-Jan-2010 14:18
Instrument: DSC Q1000 V9.8 Build 296

DSC

Sample: SEISMIC COLORSEAL (COS)
Size: 4.6750 mg
Method: HEATING 10°C/MIN
Comment: 10-05-A0043, HEATING 10°C/MIN, N2 @ 50CC/MIN

