

From: [REDACTED]
 Sent: Thursday, April 04, 2019 10:52 AM
 To: [REDACTED]
 Cc: [REDACTED]
 Subject: Fwd: Action item summary - Apr 1 meeting

FYI

[REDACTED]

Begin forwarded message:

From: [REDACTED]
 Date: April 4, 2019 at 10:50:08 AM CDT
 To: [REDACTED]
 Cc: [REDACTED]
 Subject: RE: [EXTERNAL] Action item summary - Apr 1 meeting

Hi [REDACTED]

We don't have information going back 5 years but we do have information going back 4 years.

The total % trade price adjustment over the past 4 years is 14%.

This includes the tariffs on our products, which were included in the October 1 2018 price adjustment.

Thank you

[REDACTED]

Figure 36: Email from [REDACTED] RE: Adhesive Price Increases

From: [Redacted]
Sent: Monday, March 11, 2019 2:58 PM
To: [Redacted]
Subject: RE: Panel Bond/Structural Adhesives - Usage Info.

Follow Up Flag: Follow up
Flag Status: Flagged

This is a common question and there are some variables to keep in mind such as:

- Is the adhesive being used to "butter" or "prime" the surface before the bonding bead?
- What size is the bead?
 - In our current instructions for our acrylic adhesive we state to apply a 3/8" to 1/2" bead – this allows for adequate squeeze out to cover all bare metal.
 - In our instructions for our epoxy adhesive we state to apply some adhesive to both sides of the joint and spread out as a "primer" (typically referred to as buttering) and then apply a 1/4" to 3/8" bonding bead.
 - One of our competitors states to "prime" first and then apply a 1/8" bonding bead which, in my experience, is slightly inadequate.
- Optimum bondline thickness is set by glass beads within the product, but panel flange irregularities can lead to increased material need.
- There will be a couple of "inches" of waste per package for leveling the pistons and purging the mixer.

This chart is from our industrial folks

BEAD LENGTH ESTIMATOR - FEET (M)

Linear Coverage: Use the table below to determine the length of adhesive bead that can be obtained from a cartridge of adhesives.

		BEAD DIAMETER - in (cm)					
		0.125 (0.30)	0.188 (0.48)	0.250 (0.64)	0.313 (0.80)	0.375 (0.95)	0.500 (1.30)
CARTRIDGE VOLUME (mL)	40	17 (5.00)	7.4 (2.20)	4.1 (1.30)	2.7 (0.80)	1.8 (0.60)	1.0 (0.30)
	50	21 (6.30)	9.2 (2.80)	5.2 (1.60)	3.3 (1.00)	2.3 (0.70)	1.3 (0.40)
	200	83 (25.20)	37 (11.20)	21 (6.30)	13 (4.00)	9 (2.80)	5.2 (1.60)
	375	155 (47.20)	69 (21.00)	39 (11.80)	25 (7.60)	17 (5.20)	10 (3.10)
	400	166 (50.40)	74 (22.40)	41 (12.60)	27 (8.10)	18 (5.60)	10 (3.10)
	485	201 (61.10)	89 (27.20)	50 (15.30)	32 (9.80)	22 (6.80)	13 (3.80)
	800	249 (75.60)	111 (33.60)	62 (18.70)	40 (12.10)	28 (8.40)	16 (4.70)

This is more realistic using our package sizes

Fusor	Size (Ratio)	.125"	.188"	.250"	.313"	.375"	.500"

Figure 37: Email from [Redacted] RE: Adhesive Usage by Repair Type (pg. 1)

50ml (1 or 2:1)	21"	9.2"	5.2"	3.3"	2.3"	1.3"
225ml (2:1)	93.5"	41.6"	23.6"	14.6"	10.1"	5.8"
300ml (1:1)	124.5"	55.5"	31.5"	19.5"	13.5"	7.8"

As shown above, the [redacted] has three package sizes (50, 225, 300 ml) and two mix ratios (1:1 & 2:1). Most other adhesive suppliers have "200 ml" (which be 200, 210, 220 ml or in between...). My point being that if "kits" are being discussed we need to know what is actually being used. Also, squeeze out is the preferred end result to confirm adequate adhesive is in the joint...

Now my thoughts on the original question with comments

- Door Skin – I generally say estimate for .5 of a cartridge.
- Rear Quarter Panel – size of the panel comes into play but typically estimate 1 – 1.5 cartridges.
- Roof – depends on how the sides will mate – if weld bonded flat to flat then less adhesive than if a bond-only "edge into pile" (FCA laser brazed roof replacement uses this process for repair).
- Side Panel/Aperture – for a front aperture 1-1.5, and for a rear with quarter 1.5 – 2.0 cartridges.
- Box Side (truck) – bed length and bond zones play into this but 1.0-1.5 cartridges.
- Floor Panel – not sure on this one but if it were a "spare tire well" I would say 1.0-1.5 cartridges

So, there is a lot to this topic. One competitor has a measuring tool to calculate perimeter inches and then convert to usage – interesting but I'm hearing more of a dust collector.

To stir it up more there is the seam sealing topic which aligns identically with cartridge content and bead size but sealing can eat up a lot more material than bonding as there is no bond-line thickness to achieve but instead a shape to match the original. Some of the more challenging beads such as "stacked dimes" will also have a "set-up and test" factor to dial in the replacement bead...

Hope this helps!!!



Figure 38: Email from [redacted] RE: Adhesive Usage & Repair Type (pg. 2)

INVOICE

DATE March 01, 2019
NUMBER [REDACTED]
CUSTOMER NO. MPIC

BILL TO:
MANITOBA PUBLIC INSURANCE
[REDACTED]

SHIP TO:
MANITOBA PUBLIC INSURANCE
[REDACTED]

P.O. NUMBER	F.O.B.	SALESPERSON	ORDER DATE	ORDER NUMBER		
[REDACTED]	Your dock		01-Mar-19	[REDACTED]		
SHIP VIA		TERMS				
		Net 30 days				
PART #	DESCRIPTION	QTY		LIST PRICE	UNIT PRICE	EXTENDED PRICE
		REQ.	SHIPPED			
MMM8115	PANEL ADHESIVE	1	1	98.80	71.136	71.14
MMM8116	200 ML PANEL BONDING ADHESIVE	1	1	97.62	70.286	70.29
MMM7333	IMPACT RESISTANT STRUCTURAL ADHESIVE	1	1	103.49	74.510	74.51
MMM8463	FLEXABLE FOAM (BLACK)	1	1	90.86	65.417	65.42
MMM8458	200ML PILLAR FOAM AUTOMIX	1	1	91.70	66.021	66.02
MMM4274	DAMPENING FOAM (SLOW FLEXIBLE)	1	1	84.86	61.097	61.10
MMM8307	SELF LEVELING SEAM SEALER	1	1	85.73	61.728	61.73
MMM8308	HEAVY SEAM SEALER	1	1	80.30	57.819	57.82
MMM8329	CONTROLLED FLOW S/S	1	1	73.89	53.198	53.20

TERMS: NET 30 DAYS from statement date. 2% per month (24% per annum on overdue accounts).

NET AMOUNT 581.23

FREIGHT

P.S.T. 46.50

GST Number [REDACTED]

TOTAL DUE \$ 627. 73

Figure 40: Quote from [REDACTED] Adhesive Pricing

INVOICE

DATE March 14, 2019
NUMBER [REDACTED]
CUSTOMER NO. MPIC

BILL TO:
MANITOBA PUBLIC INSURANCE
[REDACTED]

SHIP TO:
MANITOBA PUBLIC INSURANCE
[REDACTED]

P.O. NUMBER	F.O.B.	SALESPERSON	ORDER DATE	ORDER NUMBER
[REDACTED]	Your dock		14-Mar-19	[REDACTED]

SHIP VIA	TERMS
	Net 30 days

PART #	DESCRIPTION	QTY		LIST PRICE	UNIT PRICE	EXTENDED PRICE
		REQ.	SHIPPED			
FUS112B	METAL ADH SLOW	1	1	94.06	77.129	77.13
FUS208B	SLOW PANEL BOND ADHESIVE	1	1	95.00	77.900	77.90
FUS110B	METAL PATCH FAST SET	1	1	93.64	76.785	76.78
FUS108B	METAL BOND MED SET	1	1	101.20	82.984	82.98
FUS2098	CRASH DURABLE ADHESIVE SLOW	1	1	103.00	84.460	84.46
FUS130	RIGID FOAM	1	1	94.06	77.129	77.13
FUS121	FAST SET FOAM	1	1	93.64	76.785	76.78

TERMS: NET 30 DAYS from statement date. 2% per month (24% per annum on overdue accounts).

	NET AMOUNT	553.16
	FREIGHT	
	P.S.T.	44.25
	TOTAL DUE	\$ 597.41

Figure 41: Quote from [REDACTED] Adhesive Pricing