

# Single-component Laird T-Putty 607 thermal interface material for heat dissipation



## SPECIFICATIONS

### MATERIAL SUPPLIER

Laird

### INDUSTRY

Thermal Management

### APPLICATION

Electronics

### MATERIAL SPECS

- Laird T-Putty 607

#### Typical Properties

- Construction: Ceramic Filled Silicone Based
- Thermal Conductivity (W/mK): 6.0
- Color: Gray
- Flow Rate (grams/Min): 40 (.125" orifice @ 90psi)
- Density (g/cc): 3.5
- Outgassing (%TML/%CVCM) by mass: .20/.01
- Operating Temp: -40 – 150° C

### GRACO EQUIPMENT\*

#### Graco UniXact C300 Automated Dispense Table with Graco valve system

##### UniXact C300 Automation Table:

- Work envelope of 254 mm X / 277 mm Y / 70 mm Z
- Approximate overall dimensions 910 mm X 910 mm X 1800 mm including safety enclosure
- Easy and intuitive on-board operator controls
- 15 kg+ load capability
- 200 mm/s point to point; 100 mm/s dispense speed
  - Material & application dependent

- Repeatability of the machine is  $\pm 0.01$  mm (0.0004 in)
- Accuracy is  $\pm 0.1$  mm/300 mm ( $\pm 0.004$  in/12 in)
- 3D contouring dispense capability
- Servo drive motors for X, Y, Z and dispense axis (theta)
- Ball screw drives with linear guide bearings
- Needle feature options
  - Automatic needle calibration and clean
- Optional Y slides to decrease cycle time
- Light curtain, guarding, and safety interlock system
- Real-time process monitoring with data download
- Proprietary Graco software with easy to use interface

#### Continuous Positive Displacement Pump:

- 1 cc per revolution
- 1/2 revolution reverse after dispense
- Outlet needle range 12 to 14 gauge

#### Supply System:

- Dynamite, single acting supply pump
- 1 gallon pail follower plate
- Air driven pump with 12:1 power factor
- Stainless steel construction
- 5.0 cc (0.17 oz) per stroke (single acting) displacement volume
- Includes connection hoses and fittings to dispense valve



*Graco UniXact C300 provides ease of use with one control platform for all functions.*

**Laird™**

Smart Technology. Delivered.™

\* Exact equipment configuration will vary and depend on factors such as rate of output, length and size of hoses, bead size desired, and container sizes.

For more information, contact us at 1-877-844-7226 or [info@graco.com](mailto:info@graco.com). Visit us at [www.graco.com](http://www.graco.com)

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# Single-component Laird T-Putty 607 thermal interface – Test results



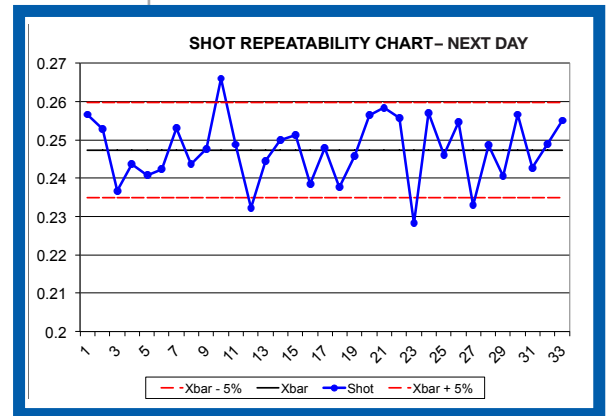
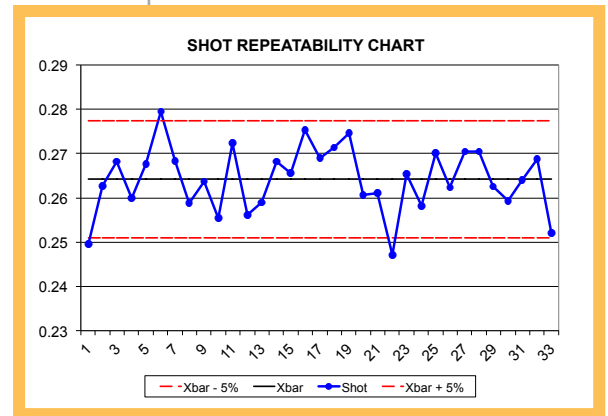
## SMALL SHOT REPEATABILITY

### Small Shot Repeatability

Run	Weight in grams	Volume in CC's
1	0.2495	0.0740
2	0.2628	0.0780
3	0.2682	0.0796
4	0.2600	0.0772
5	0.2677	0.0794
6	0.2794	0.0829
7	0.2684	0.0796
8	0.2587	0.0768
9	0.2637	0.0782
10	0.2554	0.0758
11	0.2723	0.0808
12	0.2561	0.0760
13	0.2590	0.0769
14	0.2681	0.0796
15	0.2656	0.0788
16	0.2754	0.0817
17	0.2689	0.0798
18	0.2714	0.0805
19	0.2746	0.0815
20	0.2607	0.0774
21	0.2611	0.0775
22	0.2471	0.0733
23	0.2654	0.0788
24	0.2582	0.0766
25	0.2701	0.0801
26	0.2623	0.0778
27	0.2705	0.0803
28	0.2705	0.0803
29	0.2626	0.0779
30	0.2594	0.0770
31	0.2640	0.0783
32	0.2687	0.0797
33	0.2521	0.0748
<b>Max</b>	0.2794	
<b>Min</b>	0.2471	
<b>Rng</b>	0.0323	
<b>Std</b>	0.0074	
<b>Avg + 5%</b>	0.2774	
<b>Avg</b>	0.2642	
<b>Avg - 5%</b>	0.2510	

### Small Shot Repeatability Next Day

Run	Weight in grams	Volume in CC's
1	0.2565	0.0761
2	0.2528	0.0750
3	0.2366	0.0702
4	0.2436	0.0723
5	0.2407	0.0714
6	0.2423	0.0719
7	0.2530	0.0751
8	0.2436	0.0723
9	0.2476	0.0735
10	0.2659	0.0789
11	0.2487	0.0738
12	0.2323	0.0689
13	0.2446	0.0726
14	0.2498	0.0741
15	0.2513	0.0746
16	0.2385	0.0708
17	0.2478	0.0735
18	0.2375	0.0705
19	0.2459	0.0730
20	0.2563	0.0761
21	0.2584	0.0767
22	0.2556	0.0758
23	0.2281	0.0677
24	0.257	0.0763
25	0.2460	0.0730
26	0.2546	0.0755
27	0.2330	0.0691
28	0.2485	0.0737
29	0.2406	0.0714
30	0.2565	0.0761
31	0.2427	0.0720
32	0.2489	0.0739
33	0.2550	0.0757
<b>Max</b>	0.2659	
<b>Min</b>	0.2281	
<b>Rng</b>	0.0378	
<b>Std</b>	0.0086	
<b>Avg + 5%</b>	0.2596	
<b>Avg</b>	0.2473	
<b>Avg - 5%</b>	0.2349	



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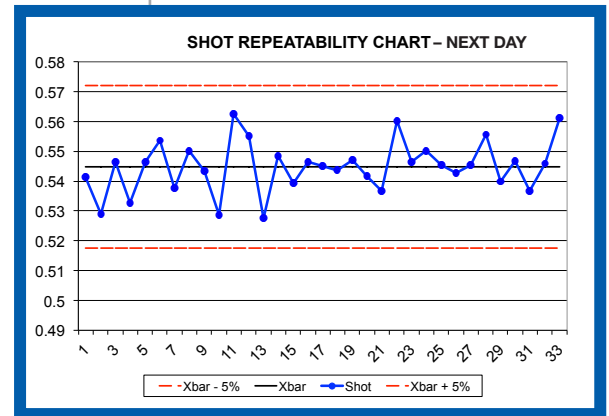
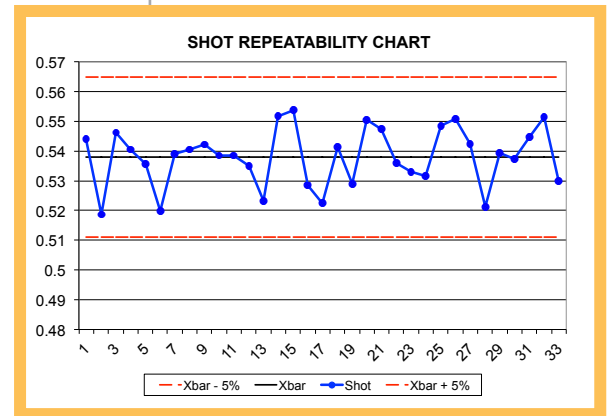
## MEDIUM SHOT REPEATABILITY

### Medium Shot Repeatability

Run	Weight in grams	Volume in CC's
1	0.5439	0.1614
2	0.5187	0.1539
3	0.5462	0.1621
4	0.5406	0.1604
5	0.5356	0.1589
6	0.5199	0.1543
7	0.5391	0.1600
8	0.5405	0.1604
9	0.5422	0.1609
10	0.5386	0.1598
11	0.5386	0.1598
12	0.5351	0.1588
13	0.5233	0.1553
14	0.5518	0.1637
15	0.5538	0.1643
16	0.5283	0.1568
17	0.5224	0.1550
18	0.5413	0.1606
19	0.5290	0.1570
20	0.5504	0.1633
21	0.5473	0.1624
22	0.5359	0.1590
23	0.5330	0.1582
24	0.5315	0.1577
25	0.5484	0.1627
26	0.5509	0.1635
27	0.5425	0.1610
28	0.5212	0.1547
29	0.5394	0.1601
30	0.5372	0.1594
31	0.5449	0.1617
32	0.5515	0.1636
33	0.5298	0.1572
<b>Max</b>	0.5538	
<b>Min</b>	0.5187	
<b>Rng</b>	0.0351	
<b>Std</b>	0.0099	
<b>Avg + 5%</b>	0.5649	
<b>Avg</b>	0.5380	
<b>Avg - 5%</b>	0.5111	

### Medium Shot Repeatability Next Day

Run	Weight in grams	Volume in CC's
1	0.5412	0.1606
2	0.5291	0.1570
3	0.5466	0.1622
4	0.5328	0.1581
5	0.5464	0.1621
6	0.5536	0.1643
7	0.5377	0.1596
8	0.5501	0.1632
9	0.5433	0.1612
10	0.5286	0.1569
11	0.5624	0.1669
12	0.5552	0.1647
13	0.5274	0.1565
14	0.5485	0.1628
15	0.5393	0.1600
16	0.5465	0.1622
17	0.5449	0.1617
18	0.5435	0.1613
19	0.5470	0.1623
20	0.5417	0.1607
21	0.5367	0.1593
22	0.5603	0.1663
23	0.5464	0.1621
24	0.5501	0.1632
25	0.5453	0.1618
26	0.5427	0.1610
27	0.5453	0.1618
28	0.5557	0.1649
29	0.5399	0.1602
30	0.5467	0.1622
31	0.5366	0.1592
32	0.5458	0.1620
33	0.5610	0.1665
<b>Max</b>	0.5624	
<b>Min</b>	0.5274	
<b>Rng</b>	0.0350	
<b>Std</b>	0.0087	
<b>Avg + 5%</b>	0.5720	
<b>Avg</b>	0.5448	
<b>Avg - 5%</b>	0.5176	



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## LARGE SHOT REPEATABILITY

### Large Shot Repeatability

Run	Weight in grams	Volume in CC's
1	1.3332	0.3956
2	1.3394	0.3974
3	1.3304	0.3948
4	1.3388	0.3973
5	1.3407	0.3978
6	1.3479	0.4000
7	1.3515	0.4010
8	1.3361	0.3965
9	1.3590	0.4033
0	1.3514	0.4010
11	1.3455	0.3993
12	1.3225	0.3924
13	1.3497	0.4005
14	1.3291	0.3944
15	1.3426	0.3984
16	1.3415	0.3981
17	1.3189	0.3914
18	1.3740	0.4077
19	1.3466	0.3996
20	1.3580	0.4030
21	1.3331	0.3956
22	1.3654	0.4052
23	1.3253	0.3933
24	1.3483	0.4001
25	1.3325	0.3954
26	1.3381	0.3971
27	1.3498	0.4005
28	1.3311	0.3950
29	1.3727	0.4073
30	1.3740	0.4077
31	1.3510	0.4009
32	1.3531	0.4015
33	1.3358	0.3964
<b>Max</b>	1.3740	
<b>Min</b>	1.3189	
<b>Rng</b>	0.0551	
<b>Std</b>	0.0142	
<b>Avg + 5%</b>	1.4117	
<b>Avg</b>	1.3445	
<b>Avg - 5%</b>	1.2772	

### Large Shot Repeatability Next Day

Run	Weight in grams	Volume in CC's
1	1.3388	0.3973
2	1.3253	0.3933
3	1.3401	0.3977
4	1.3348	0.3961
5	1.3298	0.3946
6	1.3413	0.3980
7	1.3395	0.3975
8	1.3581	0.4030
9	1.3500	0.4006
10	1.3558	0.4023
11	1.3299	0.3946
12	1.3434	0.3986
13	1.3296	0.3945
14	1.3392	0.3974
15	1.3331	0.3956
16	1.3288	0.3943
17	1.3469	0.3997
18	1.3427	0.3984
19	1.3629	0.4044
20	1.3441	0.3988
21	1.3542	0.4018
22	1.3320	0.3953
23	1.3485	0.4001
24	1.3334	0.3957
25	1.3401	0.3977
26	1.3374	0.3969
27	1.3304	0.3948
28	1.3498	0.4005
29	1.3520	0.4012
30	1.3584	0.4031
31	1.3419	0.3982
32	1.3460	0.3994
33	1.3320	0.3953
<b>Max</b>	1.3629	
<b>Min</b>	1.3253	
<b>Rng</b>	0.0376	
<b>Std</b>	0.0099	
<b>Avg + 5%</b>	1.4086	
<b>Avg</b>	1.3415	
<b>Avg - 5%</b>	1.2744	

