

# LABORATORY TESTING REPORT

## Aggregate Testing

ATTN: ARQ. NOE GARCIA  
 TO: TRICABA DE SABINAS SA DE CV  
 MORELOS SUR # 411  
 COL. MELCHOR MUZQUIZ CENTRO  
 COAHUILA DE ZARAGOZA, MX, CP. 26340

Project No.: AXD25-003-00  
 Assignment No: X25-011297  
 Report Version: A  
 Technician: CLIENT  
 Sample Date: April 2025  
 Page: 1 of 4

**PROJECT:** Pruebas de Basalto para la Fabricación de Agregados, Coahuila, Zaragoza, México

**Sample Location:** Various samples were obtained by the CLIENT and delivered to RKI. The reported source of the materials: Rancho "La Escondida" Deposit.

**Type of Material:** Basalt Sample

Test Description	Test Method	Test Results	Canadian Pacific Railway (CPR) Specification Limits					
				Primary Mainline		Secondary Mainline	Branch Line	
				CWR	Jointed		Important	Minor
Stability								
Bulk Specific Gravity (OD)	ASTM C127	2.804	Min.	2.6	2.6	2.6	2.6	2.6
Bulk Specific Gravity (SSD)	ASTM C127	2.860	Min.	2.6	2.6	2.6	2.6	2.6
Fractured Particles (%)	CPR Appendix A.1							
Grading 3		99	Min.	80	75	65	60	60
Grading 4		99	Min.	90	85	75	65	65
Grading 4.5		99	Min.	95	85	75	65	65
Grading 5		99	Min.	95	95			
Deleterious Materials								
Clay Lumps and Friable Particles (%)	ASTM C142	0	Max.	0.5	0.5	0.5	0.5	0.5
Flat & Elongated Particles (%)	ASTM D4791	1.7	Max.	5	5	5	5	5
Resistance to Weathering								
Magnesium Soundness Loss (%)	ASTM C88	4	Max.	2 *	2 *	3 *	5	5
Absorption (%)	ASTM C127	2.0	Max.	1 *	1 *	2	2	2
Abrasion Resistance (%)								
Los Angeles Abrasion (LA)	ASTM C535	12	Max.	45	45	45	45	45
Mill Abrasion (MA)	CPR Appendix A.2	2.9	Max.	9	9	9	9	9
Micro Deval Abrasion (MD)	ASTM D6928	7.7	Max.	12	12	12	12	12
Abrasion Number (AN)	CPR Appendix A.3							
Using Micro-Deval		32.9	Max.	50	50	65	65	65
Using Mill Abrasion		26.4	Max.	50	50	65	65	65

\* - Denotes nonconformance with the specifications indicated above.

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Sieve Analysis, ASTM C136									
Sieve Size	Percent Passing	Canadian Pacific Railway Grading 3		Canadian Pacific Railway Grading 4		Canadian Pacific Railway Grading 4.5		Canadian Pacific Railway Grading 5	
		Min	Max	Min	Max	Min	Max	Min	Max
2-1/2"	100					100	- 100	100	- 100
2"	100	100	- 100	100	- 100	90	- 100	90	- 100
1-1/2"	96	90	- 100	90	- 100	60	- 80 *	35	- 70 *
1"	47	70	- 90 *	20	- 55	15	- 35 *	0	- 5 *
3/4"	4	30	- 50 *	0	- 5	0	- 5		
1/2"	1	0	- 20						
3/8"	1	0	- 5						
#200	0.1	0	- 2	0	- 2	0	- 2	0	- 2

Ballast Chemical Tests			
Test Description	Test Method	Test Results	CPR Specifications
Total Sulfur (%)	SW846 6010D	0.01	Max. 0.5
Paste Ph	ASTM D4972		Min Max
in distilled water		8.1	6 - 8 *
in calcium chloride		7.8	6 - 8
Acid Base Accounting			
Neutralizing Potential Ration (NPR)		ND	Min. 1

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**Type of Material:** Basalt Sample

Test Description	Test Method	Test Results
Acid Insoluble Residue (%)	TEX-612-J	94

Total Metals Content (Texas 11 Metals), Test Method: SW846 6010D - Metals		
Metal	Content (mg/Kg)	MDL (mg/Kg)
Antimony	0.792	0.553
Arsenic	1.19	0.897
Barium	198	0.100
Beryllium	0.719	0.0684
Cadmium	<0.202	0.202
Chromium	28.1	0.418
Lead	1.91	0.255
Nickel	78.9	0.153
Selenium	1.11	1.10
Silver	<0.502	0.502
Mercury	<0.00799	<0.00799

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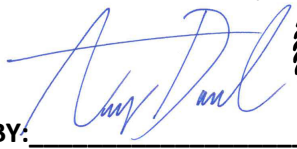
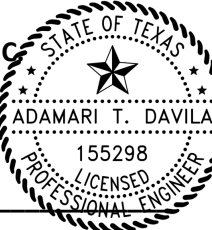
**Type of Material:** Basalt Sample

Accelerated Polish Test						
Test Sample	Test Method	Test Results PV-9 Hours (Residual)				Average
A	TEX-438-A	30	30	29	29	30
B		27	26	26	26	26
C		26	27	25	26	26
D		30	30	29	27	29
E		30	28	29	29	29
F		27	28	27	30	28
G		30	30	28	29	29
Average Results PV-9 Hours			28			

**REMARKS:** Test results are only representative of material sampled by client and received by RKI.  
Alternate Tire No. 3 used in testing; Ambient Temperature: 73°F; Surface Temperature of Specimens: 72°

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**RABA KISTNER, INC.**  
  
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