

Statement of Special Inspections

PINE TREE SHOPPING CENTER
Retail Redevelopment-RETAIL 3
Brighton Ave
Portland, Maine
January 25, 2007

Statement Prepared by
Structural Engineer of Record
Becker Structural Engineers, Inc.
75 York Street
Portland, ME 04101

Owner:
Packard Development
One Wells Ave
Newton, MA

Architect of Record:
Port City Architecture
65 Newbury St.
Portland, ME 04101

Contractor:
Benchmark
34 Thomas Drive
Westbrook, ME 04092

PINE TREE SHOPPING CENTER

Retail Redevelopment-RETAIL 2

Portland, Maine
January 25, 2007

Special Inspections Report

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01000 Statement of Special Inspections
01000.1 Statement of Special Inspections

Statement of Special Inspections

Exhibit A

Project: ***Pine Tree Shopping Center Retail #3 Redevelopment***

Location: ***Portland, Maine***

Owner: ***Packard Development***

Design Professional in Responsible Charge: ***Port City Architecture***

This *Statement of Special Inspections* is submitted as a condition for permit issuance in accordance with the Special Inspection and Structural Testing requirements of the Building Code. It includes a schedule of Special Inspection services applicable to this project as well as the name of the Special Inspection Coordinator and the identity of other approved agencies to be retained for conducting these inspections and tests. This *Statement of Special Inspections* encompass the following disciplines:

Structural Mechanical/Electrical/Plumbing
 Architectural Other: _____

The Special Inspection Coordinator shall keep records of all inspections and shall furnish inspection reports to the Building Official and the Registered Design Professional in Responsible Charge. Discovered discrepancies shall be brought to the immediate attention of the Contractor for correction. If such discrepancies are not corrected, the discrepancies shall be brought to the attention of the Building Official and the Registered Design Professional in Responsible Charge. The Special Inspection program does not relieve the Contractor of his or her responsibilities.

Interim reports shall be submitted to the Building Official, Building Owner and the Registered Design Professional in Responsible Charge.

A *Final Report of Special Inspections* documenting completion of all required Special Inspections, testing and correction of any discrepancies noted in the inspections shall be submitted prior to issuance of a Certificate of Use and Occupancy.

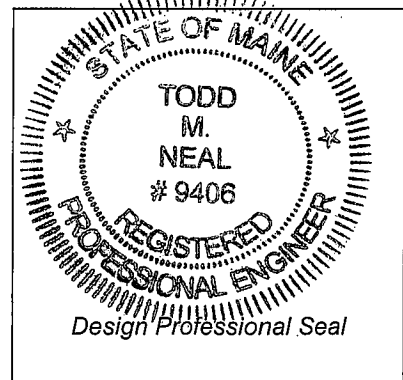
Job site safety and means and methods of construction are solely the responsibility of the Contractor.

Interim Report Frequency: ***Monthly during construction.***

or per attached schedule.

Prepared by:
Becker Structural Engineers, Inc
75 York Street
Portland, Maine

Todd M. Neal, P.E.
(type or print name)



5/10/05

Signature

Date

Owner's Authorization:

Building Official's Acceptance:

Signature

Date

Signature

Date

SUMMARY OF SERVICES (Exhibit A)-SCHEDULE OF SPECIAL INSPECTION SERVICES

Project: Pine Tree Shopping Center-Retail 3, Brighton Ave., Portland, ME

IBC Reference/ Material/Activity	Item	Service	Y/N	Extent	Comments	Agent	Date	Rev
1704.2 Inspection of Fabricators	1.00							
1704.2.1		Fabrication & Implementation Plan	Y	Sample	Copy of QA plan attached	BSE	05/30/06	
1705.3 Steel Construction	2.00							
Steel Fabrication		In-Plant-Review Part A-Fabrication/QA						
		1. AISC	N					
		2. AWS Quality Assurance	Y	Sample	Copy of QA plan attached	BSE	05/30/06	
		Part B - Procedures Implementation Review Conformance to Part A						
		1. Bolts, Nuts, Washers	Y	Sample	AISC ASD A3.4	TL	09/22/06	
		2. Structural Steel	Y	Sample	AISC A6 or A508	TL	09/22/06	
		3. Weld Filler Material	Y	Sample	AISC ASD A3.6	TL	09/22/06	
		Review Connections						
		1. Shop Bolted	NA					
		2. Shop Welded	Y	All	In Field-Visual	TL	09/22/06	
		3. Connection Design Calcs	Y	All Bracing	Engineer of Record	BSE		
		4. Shop Welder Certs	N					
		Review Material Certs of Compliance						
		1. Bolts, Nuts, Washers	Y	All		BSE	01/17/07	
		2. Structural Steel	Y	All		BSE	01/17/07	
		3. Weld Filler Material	Y	All		BSE	01/17/07	
		Review Primary Steel Connections						
		Moment Connections	Y	All	Ultrasonic tested (UT)	TL	08/31/06	
		Shear Connections						
		1. Field Bolted	Y	All		TL	09/22/06	
		2. Field Welded	Y	All		TL	09/22/06	

BSE=Becker Structural Engineers; TL=Testing Laboratory; ARCH=Architect; NA=Not Applicable

SUMMARY OF SERVICES (Exhibit A)_SCHEDULE OF SPECIAL INSPECTION SERVICES

Project: Pine Tree Shopping Center-Retail 3, Brighton Ave., Portland, ME

Material/Activity	Item	Service	Y/N	Extent	Comments	Agent	Date	Rev
1705.3 Steel Construction Cont'd	2.00							
Steel Erection Cont'd								
		Review Welded Column Splices	NA					
		Review Base Metal Testing for "t">1 1/2"	NA					
		Review Secondary Steel Connections						
		1. Girts	Y	Sample		TL	09/22/06	
		2. Loose Lintels	NA					
		3. Steel Deck	Y	All		TL	09/22/06	
		4. Precast Wall Panel Connections	NA					
		5. Relieving Angles	N					
		6. Installation of Shear Studs	NA					
		7. Review Details/Steel Frame	Y	Sample		BSE/TL	08/30/06	
Steel Joist & Joist Girders		Part A - Fabrication Procedures						
		In Plant Review	N					
		Steel Joist Institute	Y	Provide Certification	Attached	BSE	5/30/06	
		Part B - Procedures Implementation	N					
		1. Review Connections	N					
		2. Review Welder Certifications	N					
		Part C - Material Certifications						
		1. Structural Steel	Y	All		BSE	08/30/06	
		2. Weld Material	Y	All		BSE	08/30/06	
Joist Erection		Review Joist Bearing Connections	Y	All		TL	09/22/06	
		Review Joist Bearing Length	Y	All		TL	09/22/06	
		Review Joist Bridging	Y	All		TL	09/22/06	

SUMMARY OF SERVICES (Exhibit A)-SCHEDULE OF SPECIAL INSPECTION SERVICES

Project: Pine Tree Shopping Center-Retail 3, Brighton Ave., Portland, ME

Material/Activity	Item	Service	Y/N	Extent	Comments	Agent	Date	Rev
1705.4 Concrete Construction	4.00							
Concrete Materials		1. Cement	Y	All	ASTM C150	BSE	04/11/05	
		2. Normal Weight Aggregates	Y	All	ASTM C33	BSE	04/11/05	
		3. Air Entraining Admixture	Y	All	ASTM C260	BSE	04/11/05	
		4. Normal Range Water Reducer	Y	All	ASTM C494	BSE	04/11/05	
		5. Hi-Range Water Reducer	Y	All	ASTM C494	BSE	04/11/05	
		6. Accelerator	NA					
Concrete Accessories		1. Vapor Retarder	Y	All		ARCH		
		2. Curing Products	NA					
		3. Preformed Expansion Joints	NA					
Mix Design		Review Mix Designs			ACI Chapter 4			
		1. FDN Walls & Footings	Y	All		BSE	04/11/05	
		2. Slabs on Grade	Y	All		BSE	04/11/05	
		3. Elevated Slabs	Y	All		BSE	04/11/05	
		4. Exterior Slabs	N					
Reinforcement Material		Reinforcement Material Certifications	Y	All		BSE	12/12/06	
Placing Reinforcement		Review condition & placement of reinforcing						
		1. Footings & Foundation Walls	Y	Sample	Multiple placements observed.	BSE/TL	Continuous	
		2. Slabs on Grade	N		Misc areas bonded out for owner	BSE/TL	Continuous	
		3. Elevated Slabs	NA					
		4. Topping Slabs	NA					
		5. Review Embedded Items: Bolts, Plates, etc.	Y			BSE	Continuous	
Formwork		Review installation of Forms	Y	Sample		BSE	Continuous	
		Review Form Removal & Restoring	Y	Sample		BSE	Continuous	

BSE= Becker Structural Engineers; TL=Testing Laboratory; ARCH=Architect; NA=Not Applicable

SUMMARY OF SERVICES (Exhibit A)-SCHEDULE OF SPECIAL INSPECTION SERVICES

Project: Pine Tree Shopping Center-Retail 3, Brighton Ave., Portland, ME

Material/Activity	Item	Service	Y/N	Extent	Comments	Agent	Date	Rev
1705.4 Concrete Construction Cont'd	4.00							
Concrete Operations		1. Field Sampling & Testing of Concrete	Y	As per Specifications		TL	Continuous	
		2. Review Concrete Strength Results	Y		ACI 318.5.6	BSE/TL	Continuous	
		3. Review Mix Proportions & Technique	Y		ACI 318.5.2 - 5.4, & 5.8	TL	Continuous	
		4. Review Concrete Placement	Y	Sample	ACI 318.5.9 & 5.10 Slab poured w/out sufficient notification to engineer.	BSE/TL	Continuous	
		5. Review Curing Technique & Temperature	Y	Sample	ACI 318.5.11, 5.12, & 5.13	BSE/TL	Continuous	
Prestressing Operations		Review Application of Prestressing Force	NA					
Precast Manufacturing		Part A - Fabrication Procedures In- Plant Review - Architectural	NA					
Erection of Precast		In- Plant Review - Structural Part A - Architectural	NA					
		1. Review Erection of Precast Units						
		2. Review Connections						
		3. Review Sealant						
		4. Review Grouting						
		Part B - Structural	NA					
		1. Review Erection of Precast Units						
		2. Review Connections						
		3. Review Key Reinforcement						
		4. Review Grouting						

SUMMARY OF SERVICES (Exhibit A)-SCHEDULE OF SPECIAL INSPECTION SERVICES

Project: Pine Tree Shopping Center-Retail 3, Brighton Ave., Portland, ME

Material/Activity	Item	Service	Y/N	Extent	Comments	Agent	Date	Rev
1705.5 Masonry Construction Materials	4.00	NOT APPLICABLE						
					Non- Structural (Veneer)			
Mix Designs								
Testing								
Masonry Installation								
1705.7 Wood Construction	5.00	NOT APPLICABLE						
1705.7 Prepared Fill	6.00							
Site Preparation		Review Site Preparation prior to fill placement	Y	Sample	Field Density Reports included w/Concrete Tests	TL	09/27/06	
Fill Placement		Review Compliance to Soils Report						
		1. Material	Y	Sample	See Concrete Test Results	TL	09/27/06	
		2. Lift Thickness	Y	Sample	See Concrete Test Results	TL	09/27/06	
Evaluation		Review in-place dry density for compliance with soils report	Y	Sample	Field Density Reports included w/Concrete Tests	TL	09/27/06	

Schedule of Inspection and Testing Agencies

Exhibit B

This Statement of Special Inspections / Quality Assurance Plan includes the following building systems:

- | | |
|---|---|
| <input checked="" type="checkbox"/> Soils and Foundations | <input type="checkbox"/> Spray Fire Resistant Material |
| <input checked="" type="checkbox"/> Cast-in-Place Concrete | <input type="checkbox"/> Wood Construction |
| <input type="checkbox"/> Precast Concrete | <input checked="" type="checkbox"/> Exterior Insulation and Finish System |
| <input type="checkbox"/> Masonry | <input type="checkbox"/> Mechanical & Electrical Systems |
| <input checked="" type="checkbox"/> Structural Steel | <input type="checkbox"/> Architectural Systems |
| <input checked="" type="checkbox"/> Cold-Formed Steel Framing | <input type="checkbox"/> Special Cases |

Special Inspection Agencies	Firm	Address, Telephone, e-mail
1. Special Inspection Coordinator	<i>Becker Structural Engineers, Inc</i>	<i>75 York Street Portland, ME 04101 207-879-1838</i>
2. Inspector	<i>Todd M. Neal, P.E. Becker Structural Engineers, Inc (BSE)</i>	<i>75 York Street Portland, ME 04101 207-879-1838 todd@beckerstructural.com</i>
3. Inspector	<i>Adam White, EI Becker Structural Engineers, Inc (BSE)</i>	<i>75 York Street Portland, ME 04101 207-879-1838 adam@beckerstructural.com</i>
4. Testing Agency	<i>To Be Determined (TL)</i>	
5. Testing Agency		
6. Other	<i>John Charette Port City Architecture (PCA)</i>	<i>65 Newbury Street Portland, ME 04101 207-761-9000 john@portcityarch.com</i>

Note: The inspectors and testing agencies shall be engaged by the Owner or the Owner's Agent, and not by the Contractor or Subcontractor whose work is to be inspected or tested. Any conflict of interest must be disclosed to the Building Official, prior to commencing work.

Quality Assurance Plan

Exhibit B

Quality Assurance for Seismic Resistance

Seismic Design Category **B**
 Quality Assurance Plan Required (Y/N) **yes**

Description of seismic force resisting system and designated seismic systems:

The seismic force resisting system consists of moment frames.

All welds to be inspected as per AWS D1.1. All field welded moment connections shall be tested by Ultrasonic Inspection (ASTM E 164).

All bolted connections shall be inspected as per procedures outlined in AISC "Specifications for Structural Joints Using ASTM A325 or 490 bolts".

Quality Assurance for Wind Requirements

Basic Wind Speed (3 second gust) **100**
 Wind Exposure Category **C**
 Quality Assurance Plan Required (Y/N) **No**

Description of wind force resisting system and designated wind resisting components:

Statement of Responsibility

Each contractor responsible for the construction or fabrication of a system or component designated above must submit a Statement of Responsibility.

Qualifications of Inspectors and Testing Technicians

Exhibit B

The qualifications of all personnel performing Special Inspection and testing activities are subject to the approval of the Building Official. The credentials of all Inspectors and testing technicians shall be provided if requested.

Key for Minimum Qualifications of Inspection Agents:

When the Registered Design Professional in Responsible Charge deems it appropriate that the individual performing a stipulated test or inspection have a specific certification or license as indicated below, such designation shall appear below the *Agency Number* on the Schedule.

PE/SE	Structural Engineer – a licensed SE or PE specializing in the design of building structures
PE/GE	Geotechnical Engineer – a licensed PE specializing in soil mechanics and foundations
EIT	Engineer-In-Training – a graduate engineer who has passed the Fundamentals of Engineering examination

American Concrete Institute (ACI) Certification

ACI-CFTT	Concrete Field Testing Technician – Grade 1
ACI-CCI	Concrete Construction Inspector
ACI-LTT	Laboratory Testing Technician – Grade 1&2
ACI-STT	Strength Testing Technician

American Welding Society (AWS) Certification

AWS-CWI	Certified Welding Inspector
AWS/AISC-SSI	Certified Structural Steel Inspector

American Society of Non-Destructive Testing (ASNT) Certification

ASNT	Non-Destructive Testing Technician – Level II or III.
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International Code Council (ICC) Certification

ICC-SMSI	Structural Masonry Special Inspector
ICC-SWSI	Structural Steel and Welding Special Inspector
ICC-SFSI	Spray-Applied Fireproofing Special Inspector
ICC-PCSI	Prestressed Concrete Special Inspector
ICC-RCSI	Reinforced Concrete Special Inspector

National Institute for Certification in Engineering Technologies (NICET)

NICET-CT	Concrete Technician – Levels I, II, III & IV
NICET-ST	Soils Technician - Levels I, II, III & IV
NICET-GET	Geotechnical Engineering Technician - Levels I, II, III & IV

Exterior Design Institute (EDI) Certification

EDI-EIFS	EIFS Third Party Inspector
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Other

Item	Agency # (Qualif.)	Scope
1. Shallow Foundations	<i>TL</i>	<i>Inspect soils below footings for adequate bearing capacity and consistency with geotechnical report.</i>
	<i>TL</i>	<i>Inspect removal of unsuitable material and preparation of subgrade prior to placement of controlled fill</i>
	<i>PE/GE</i>	
2. Controlled Structural Fill	<i>TL</i>	<i>Perform sieve tests (ASTM D422 & D1140) and modified Proctor tests (ASTM D1557) of each source of fill material.</i>
	<i>TL</i>	<i>Inspect placement, lift thickness and compaction of controlled fill.</i>
	<i>TL</i>	<i>Test density of each lift of fill by nuclear methods (ASTM D2922)</i>
	<i>TL</i>	<i>Verify extent and slope of fill placement.</i>
	<i>PE/GE</i>	

Comments:

Item	Agency # (Qualif.)	Scope
1. Mix Design	<i>BSE/ TL</i> <i>ACI-CCI</i> <i>ICC-RCSI</i>	<i>Review concrete batch tickets and verify compliance with approved mix design. Verify that water added at the site does not exceed that allowed by the mix design.</i>
2. Material Certification	<i>BSE</i>	<i>Submitted for review with Mix Design</i>
3. Reinforcement Installation	<i>BSE</i>	<i>Inspect size, spacing, cover, positioning and grade of reinforcing steel. Verify that reinforcing bars are free of form oil or other deleterious materials. Inspect bar laps and mechanical splices. Verify that bars are adequately tied and supported on chairs or bolsters</i>
6. Anchor Rods	<i>BSE</i>	<i>Inspect size, positioning and embedment of anchor rods. Inspect concrete placement and consolidation around anchors.</i>
7. Concrete Placement	<i>BSE/ TL</i> <i>ACI-CCI</i> <i>ICC-RCSI</i>	<i>Inspect placement of concrete. Verify that concrete conveyance and depositing avoids segregation or contamination. Verify that concrete is properly consolidated.</i>
8. Sampling and Testing of Concrete	<i>TL</i> <i>ACI-CFTT</i> <i>ACI-STT</i>	<i>Test concrete compressive strength (ASTM C31 & C39), slump (ASTM C143), air-content (ASTM C231 or C173) and temperature (ASTM C1064).</i>
9. Curing and Protection	<i>BSE/ TL</i> <i>ACI-CCI</i> <i>ICC-RCSI</i>	<i>Inspect curing, cold weather protection and hot weather protection procedures.</i>

Comments:

Item	Agency # (Qualif.)	Scope
1. Fabricator Certification/ Quality Control Procedures <input type="checkbox"/> Fabricator Exempt	<i>BSE</i>	<i>Review shop fabrication and quality control procedures.</i>
2. Material Certification	<i>BSE</i>	<i>Review certified mill test reports and identification markings on wide-flange shapes, high-strength bolts, nuts and welding electrodes</i>
3. Open Web Steel Joists	<i>BSE/ TL</i>	<i>Inspect installation, field welding and bridging of joists.</i>
4. Bolting	<i>BSE/ TL</i> <i>AWS/AISC-SSI</i> <i>ICC-SWSI</i>	<i>Inspect installation and tightening of high-strength bolts. Verify that splines have separated from tension control bolts. Verify proper tightening sequence. Continuous inspection of bolts in slip-critical connections.</i>
5. Welding	<i>TL</i> <i>AWS-CWI</i> <i>ASNT</i>	<i>Visually inspect all welds. Inspect pre-heat, post-heat and surface preparation between passes. Verify size and length of fillet welds.</i> <i>Ultrasonic testing of all full-penetration welds.</i>
6. Shear Connectors	<i>BSE/ TL</i> <i>AWS/AISC-SSI</i> <i>ICC-SWSI</i>	<i>Inspect size, number, positioning and welding of shear connectors. Inspect studs for full 360 degree flash. Ring test all shear connectors with a 3 lb hammer. Bend test all questionable studs to 15 degrees.</i>
7. Structural Details	<i>BSE</i> <i>PE/SE</i>	<i>Inspect steel frame for compliance with structural drawings, including bracing, member configuration and connection details.</i>
8. Metal Deck	<i>BSE/ TL</i> <i>AWS-CWI</i>	<i>Inspect welding and side-lap fastening of metal roof and floor deck.</i>

Comments:

Cold-Formed Steel Framing *Exhibit B*

Item	Agency # (Qualif.)	Scope
1. Member Sizes	<i>BSE</i>	<i>Field verify sampling of material.</i>
2. Material Thickness	<i>BSE</i>	<i>Field verify sampling of material.</i>
3. Material Properties	<i>BSE</i>	<i>Field verify sampling of material.</i>
4. Mechanical Connections	<i>BSE</i>	<i>Field verify sampling of material.</i>
5. Welding	<i>BSE/TL</i>	<i>Field verify sampling of material.</i>
6. Framing Details	<i>BSE</i>	<i>Field verify sampling of material.</i>
7. Trusses	<i>BSE</i>	<i>Field verify details conform to design</i>
8. Permanent Truss Bracing	<i>BSE</i>	<i>Field verify braces are installed as per design</i>

Comments:

Final Report of Special Inspections

Exhibit C

Project: *Pine Tree Shopping Center Retail #3 Redevelopment*
Location: *Portland, Maine*
Owner: *Packard Development*
Owner's Address: *One Wells Avenue*
Newton, Massachusetts 02459
Architect of Record: *Port City Architecture*
Structural Engineer of Record: *Becker Structural Engineers, Inc*

To the best of my information, knowledge and belief, the Special Inspections required for this project, and itemized in the *Statement of Special Inspections* submitted for permit, have been performed and all discovered discrepancies have been reported and resolved other than the following:

Comments:

(Attach continuation sheets if required to complete the description of corrections.)

Interim reports submitted prior to this final report form a basis for and are to be considered an integral part of this final report.

Respectfully submitted,
Special Inspector

Becker Structural Engineers, Inc

Todd M. Neal, P.E.

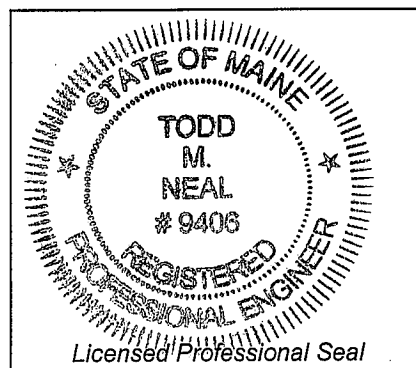
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Signature

1/26/07

Date



01000 Statement of Special Inspections

01000.2 Disclaimers and Qualifications

The program of Structural/Special Tests and Inspections does not relieve the Contractor or its Subcontractors of their responsibilities and obligations for quality control of the work, for any design work which is included in the scope of services, and for full compliance with the requirements of the Construction Documents. Furthermore, the detection of, or the failure to detect, deficiencies or defects in work during testing and inspection conducted pursuant to the Program does not relieve the Contractor or its subcontractors of their responsibility to correct all deficiencies or defects, whether detected or undetected, in all parts of work, and to otherwise comply with all requirements of the Construction Documents. No warrantee is expressed or implied by the issuance of this document. Additional disclaimers and/or qualifications may be included in the Owner-Special Inspection agreement.

03300 Cast-in-Place Concrete
03300.1 BSE Observation Reports

BECKER

03300

structural engineers, inc.

Project: PINE TREE R3

Location: PORTLAND.

Becker Job No:

OBSERVATION REPORT

Cast in Place Concrete

Date: 8/1/06

Time: 9:15

Temp: 82

Weather: HOT/HUMID OVERCAST

Observation Location:

LINE 1 & F WALLS

LINE 4 FOOTINGS B → E

	Satisfactory	Un-Satisfactory	Not Completed	Not Applicable
Reinforcement Size	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Quantity	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Placement	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Embed/Anchors	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lap Splices	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Hot Weather	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Cold Weather	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Bond Beams	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Additional Items	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Additional Items	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Comments

#4 @ 24" ALT FACE.

NOT INSTALLED @ TIME OF INSPECTION

Notes:

Signed: Paul B. Becker, P.E.

Project: PINE TREE RETAIL 3
 Location: PORTLAND, ME
 Becker Job No: 1527

OBSERVATION REPORT
 Cast in Place Concrete

Date: 8/21/06
 Time: 11:15
 Temp: Pt. Cloudy
 Weather: 75

Observation Location: FOOTINGS- LINE 3 & LINE A

	Satisfactory	Un-Satisfactory	Not Completed	Not Applicable	
Reinforcement Size	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Quantity	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Condition	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Placement	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Embed/Anchors	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Lap Splices	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Hot Weather	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Cold Weather	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Bond Beams	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Additional Items	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Additional Items	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

Notes:

Signed: Paul B. Becker, P.E. ADAM WHITE

BECKER

03300

structural engineers, inc.

Project: **PINE TREE RETAIL 3**
Location: **PORTLAND, ME**
Becker Job No: **1527**

OBSERVATION REPORT

Cast in Place Concrete

Date: **10/2/06**
Time: **1:00**
Temp: **60°**
Weather: **CLOUDY**

Observation Location: **SLAB ON GRADE, LINE D TO F**

	Satisfactory	Un-Satisfactory	Not Completed	Not Applicable	Comments
Reinforcement Size	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Quantity	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Condition	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Placement	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Embed/Anchors	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Lap Splices	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Hot Weather	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Cold Weather	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Bond Beams	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Additional Items	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Additional Items	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Notes: **SLAB HAD BEEN PLACED A FEW HOURS EARLIER. FINISHING WORK WAS IN PROGRESS. CONFIRMED W/ SPT. THAT LAPOR BARRIER & WUF WERE PROPERLY POSITIONED.**

Signed: Adam M. White, E.I.

03300 Cast-in-Place Concrete

03300.2 Mix Designs/Product Data/Material Certifications

Benchmark Construction

Pine Tree Shopping Center Retail Redevelopment

3000PSI Footing & Wall			
Mix Design Submittal			
30SA			
		CF	
CEMENT	517 Lbs	2.63	CIMENT QUEBEC
COARSE AGG - #57 Stone (3/4)	1650 Lbs	10.13	K&K EXCAVATION
FINE AGGREGATE	1350 Lbs	8.29	PORTLAND SAND
WATER	280.0 Lbs	4.49	CITY OF WESTBROOK
POLYHEED 1020	1.5 oz/cwt		MASTERBUILDERS
MB-AE 90(Air Entrainment)	0.25 oz/cwt		MASTERBUILDERS
AIR CONTENT (%)	6.0 % +/- 1.5	1.63	
WATER/CEMENT RATIO	0.54 Lbs		
SLUMP (Inches)	4.00 In		
YIELD		27.16	

3000PSI Interior Slab on Grade			
Mix Design Submittal			
30SN			
		CF	
CEMENT	517 Lbs	2.63	CIMENT QUEBEC
COARSE AGG ASTM #57	1750 Lbs	10.35	K&K EXCAVATION
FINE AGGREGATE	1550 Lbs	9.17	PORTLAND SAND
WATER	280.0 Lbs	4.49	CITY OF WESTBROOK
POLYHEED 1020	2.0 oz/cwt		MASTERBUILDERS
AIR CONTENT (%)	2.0 % +/- 1.5	0.54	
WATER/CEMENT RATIO	0.54 Lbs		
SLUMP (Inches)	4.00 In		
YIELD		27.17	

4500PSI Exterior Concrete			
Mix Design Submittal			
45SA			
		CF	
CEMENT	611 Lbs	3.11	CIMENT QUEBEC
COARSE AGG ASTM #57	1700 Lbs	10.40	K&K EXCAVATION
FINE AGGREGATE	1275 Lbs	7.74	PORTLAND SAND
WATER	275 Lbs	4.41	CITY OF WESTBROOK
POLYHEED 1020	2.0 oz/cwt		MASTERBUILDERS
MB-AE 90	0.5 oz/cwt		MASTERBUILDERS
AIR CONTENT (%)	6.0 % +/- 1.0	1.63	
WATER/CEMENT RATIO	0.45 Lbs		
SLUMP (Inches)	4.00 In		
YIELD		27.28	

POZZUTEC® 20+

Accelerating Admixture

Product Data	
3	03-30-00 Cast-In-Place Concrete
	03-40-00 Precast Concrete

Description

Pozzutec® 20+ admixture is a multi-component, non-chloride, water-reducing and accelerating admixture formulated to accelerate concrete setting time and increase early and ultimate strengths across a wide range of ambient temperatures (hot, mild, cold and subfreezing). Pozzutec 20+ admixture meets ASTM C 494 requirements for Type C, accelerating, and Type E, water-reducing and accelerating, admixtures.

Applications

Recommended for use in:

- Concrete being placed in subfreezing ambient conditions
- Reinforced, precast, pumped, flowable, lightweight or normal weight concrete and shotcrete (wet mix)
- Concrete placed on galvanized steel floor and roof systems that are left in place
- Prestressed concrete
- Fast-track concrete construction
- Concrete subject to chloride ion limitations

Features

- Accelerated setting time
- Especially effective for concrete placement at ambient temperatures as low as 20 °F (-7 °C)
- Superior workability
- Increased early and ultimate strength
- Superior finishing characteristics for flatwork and cast surfaces

Benefits

- Earlier finishing of slabs – reduced labor costs
- Reduced in-place concrete costs
- Reduced or eliminated heating and protection time in cold weather
- Earlier stripping and reuse of forms

Performance Characteristics

Mix Data

Type II cement, lb/yd ³ (kg/m ³)	600 (356)
Slump, in. (mm)	4 ± 1 (100 ± 25)
Air Content %	Non-air-entrained concrete
Concrete Temperature	55 °F (12 °C)

Mild Weather

Setting Time: Ambient Temperature: 70 °F (21 °C)

Mix	Time of Set	
	Initial Set (h:min)	Comparison (h:min)
Plain	4:30	REF
Pozzutec 20+ admixture @ • 10 fl oz/cwt (650 mL/100 kg)	3:18	- 1:12

Cold Weather

Setting Time: Ambient Temperature: 50 °F (10 °C)

Mix	Time of Set	
	Initial Set (h:min)	Comparison (h:min)
Plain	5:48	REF
Pozzutec 20+ admixture @ • 20 fl oz/cwt (1,300 mL/100 kg)	4:00	- 1:48

Subfreezing Weather

Setting Time: Ambient Temperature: 30 °F (-1 °C)

Mix	Time of Set	
	Initial Set (h:min)	Comparison (h:min)
Plain	12:12	REF
Pozzutec 20+ admixture @		
• 60 fl oz/cwt (3,910 mL/100 kg)	3:54	- 8:18
• 90 fl oz/cwt (5,850 mL/100 kg)	2:24	- 9:48

Guidelines for Use

Dosage: The specific dosage of Pozzutec® 20+ admixture for a given application is dependent on ambient and concrete temperatures, cement chemistry, concrete mixture proportions, the amount of set time acceleration needed and strength performance required. Listed below are the recommended dosage ranges for various weather applications.

Recommended Dosage for Mild and Cold Weather Applications:

Use 5 - 60 fl oz/cwt (325 - 3,910 mL/100 kg) of cementitious material. As the dosage rate of Pozzutec 20+ admixture is increased, setting time is accelerated and early and ultimate strengths are increased.

Recommended Dosage for Subfreezing Weather Applications:

Use 60 - 90 fl oz/cwt (3,910 - 5,870 mL/100 kg) of cementitious material to reduce the freezable water content of the mixture, to accelerate setting time and to provide early protection against freezing while the concrete is plastic in subfreezing temperatures.

Conservation of the heat generated by the concrete through the use of wind protection and/or insulation will permit placement in subfreezing ambient temperatures. See ACI 306.1, "Standard Specification for Cold Weather Concreting," and ACI 306 committee report, "Cold Weather Concreting" for recommended protection in cold weather.

Exposure to air movement, concrete surface to volume ratio, and mixture proportions all affect performance under extreme cold weather conditions. Concrete containing Pozzutec 20+ admixture may reduce or eliminate the need for recognized protective measures and protection time required in cold or subfreezing weather concreting applications. Field evaluations of the concrete mixture selected for the project should be performed using local materials to determine: the optimum dosage rate of Pozzutec 20+ admixture required to achieve the desired setting time and strength performance; the minimum acceptable ambient and concrete temperatures for placement; and, if the recognized protective measures and protection time required for cold and subfreezing weather concreting may be reduced or eliminated.

Concrete containing Pozzutec 20+ admixture that will be exposed to subfreezing weather conditions must be sealed to prevent the ingress of additional water to hardened concrete during curing in place. A surface sealer must be applied as soon as the concrete reaches initial set or finishing is complete. Confilm® evaporation retardant is recommended to minimize evaporation of surface moisture.

Product Notes

Corrosivity - Non-Chloride, Non-Corrosive: Pozzutec 20+ admixture will neither initiate nor promote corrosion of reinforcing steel in concrete.

Compatibility: Pozzutec 20+ admixture can be used as a singular admixture or as a component in a Degussa Admixtures, Inc. admixture system. When used with other admixtures, each admixture must be dispensed separately into the mixture.

In subfreezing temperatures, the only high-range water-reducing admixtures recommended for use with Pozzutec 20+ admixture are Glenium® high-range, water-reducers and Rheobuild® 1000 admixture to obtain increased water reduction and strength performance.

Storage and Handling

Storage Temperature: Store at 50 °F (-10 °C) or above. If Pozzutec 20+ admixture freezes, thaw at 35 °F (2 °C) or above and completely reconstitute by mild mechanical agitation. **Do not use pressurized air for agitation.**

Shelf Life: Pozzutec 20+ admixture has a minimum shelf life of 12 months. Depending on storage conditions, the shelf life may be greater than stated. Please contact your Degussa Admixtures, Inc. representative regarding suitability for use and dosage recommendations if the shelf life of Pozzutec 20+ admixture has been exceeded.

Packaging

Pozzutec 20+ admixture is supplied in 55 gal (208 L) drums, 275 gal (1040 L) totes and by bulk delivery.

Related Documents

Material Safety Data Sheets: Pozzutec 20+.

Additional Information

For additional information on Pozzutec 20+ admixture or on its use in developing a concrete mixture with special performance characteristics, contact your Degussa Admixtures, Inc. representative.

Degussa Admixtures, Inc. is a leading provider of innovative chemical admixtures and silica fume for specialty concrete used in the ready mix, precast, manufactured concrete products, underground construction and paving markets in the United States and Canada. The Company's respected Master Builders brand products are used to improve the placing, pumping, finishing, appearance and performance characteristics of concrete..



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creating essentials

MB AE™ 90

Air-Entraining Admixture

Product Data	
05 30 00	Cast-In-Place Concrete
05 40 00	Precast Concrete
05 70 00	Mass Concrete

Description

MB-AE 90 is an air-entraining admixture for use in concrete mixtures. It meets the requirements of ASTM C 260, AASHTO M 154 and CRD-C 13.

Applications

Recommended for use in:

- Concrete exposed to cyclic freezing and thawing
- Production of high-quality normal or lightweight concrete (heavyweight concrete normally does not contain entrained air)

Features

- Ready-to-use – in the proper concentration for rapid, accurate dispensing

Benefits

- Improved resistance to damage from cyclic freezing and thawing
- Improved resistance to scaling from deicing salts
- Improved plasticity and workability
- Reduced permeability – increased watertightness
- Reduced segregation and bleeding

Performance Characteristics

Concrete durability research has established that the best protection for concrete from the adverse effects of freezing and thawing cycles and deicing salts results from: proper air content in the hardened concrete, a suitable air-void system in terms of bubble size and spacing, and adequate concrete strength, assuming the use of sound aggregates and proper mixing, transporting, placing, consolidation, finishing and curing techniques. MB AE 90 admixture can be used to obtain adequate freeze-thaw durability in a properly proportioned concrete mixture, if standard industry practices are followed.

Air Content Determination: The total air content of normal weight concrete should be measured in strict accordance with ASTM C 231, "Standard Test Method for Air Content of Freshly Mixed Concrete by the Pressure Method" or ASTM C 173/C 173M, "Standard Test Method for Air Content of Freshly Mixed Concrete by the Volumetric Method." The air content of lightweight concrete should only be determined using the Volumetric Method. The air content should be verified by calculating the gravimetric air content in accordance with ASTM C 138/C 138M, "Standard Test Method for Density (Unit Weight), Yield, and Air Content (Gravimetric) of Concrete." If the total air content, as measured by the Pressure Method or Volumetric Method and as verified by the Gravimetric Method, deviates by more than 1-1/2%, the cause should be determined and corrected through equipment calibration or by whatever process is deemed necessary.

Guidelines for Use

Dosage: There is no standard dosage for MB AE 90 admixture. The exact quantity of air-entraining admixture needed for a given air content of concrete varies because of differences in concrete-making materials and ambient conditions. Typical factors that might influence the amount of air entrained include: temperature, cementitious materials, sand gradation, sand-aggregate ratio, mixture proportions, slump, means of conveying and placement, consolidation and finishing technique.

The amount of MB AE 90 admixture used will depend upon the amount of entrained air required under actual job conditions. In a trial mixture, use 1/4 to 4 fl oz/cwt (16-260 mL/100 kg) of cementitious material. Measure the air content of the trial mixture, and, if needed, either increase or decrease the quantity of MB AE 90 admixture to obtain the desired air content.

In mixtures containing water-reducing or set-control admixtures, the amount of MB AE 90 admixture needed may be somewhat less than the amount required in plain concrete.

Due to possible changes in the factors that can affect the dosage of MB AE 90 admixture, frequent air content checks should be made during the course of the work. Adjustments to the dosage should be based on the amount of entrained air required in the mixture at the point of placement.

If an unusually high or low dosage of MB AE 90 admixture is required to obtain the desired air content, consult your Degussa Admixtures, Inc. representative. In such cases, it may be necessary to determine that, in addition to a proper air content in the fresh concrete, a suitable air-void system is achieved in the hardened concrete.

Dispensing & Mixing: Add MB AE 90 admixture to the concrete mixture using a dispenser designed for air-entraining admixtures, or add manually using a suitable measuring device that ensures accuracy within plus or minus 3% of the required amount.

For optimum, consistent performance, the air-entraining admixture should be dispensed on damp, fine aggregate. If the concrete mixture contains fine lightweight aggregate, field evaluations should be conducted to determine the best method to dispense the air-entraining admixture.

Product Notes

Compatibility: MB AE 90 admixture may be used in combination with any Degussa Admixtures, Inc. admixture, unless stated otherwise on the data sheet for the other product. When used in conjunction with other admixtures, each admixture must be dispensed separately into the concrete mixture.

Storage and Handling

Storage Temperature: MB AE 90 admixture should be stored and dispensed at 31 °F (-0.5 °C) or higher. Although freezing does not harm this product, precautions should be taken to protect it from freezing. If MB AE 90 admixture freezes, thaw at 35 °F (2 °C) or above and completely reconstitute by mild mechanical agitation. Do not use pressurized air for agitation.

Shelf Life: MB AE 90 admixture has a minimum shelf life of 12 months. Depending on storage conditions, the shelf life may be greater than stated. Please contact your Degussa Admixtures, Inc. representative regarding suitability for use and dosage recommendations if the shelf life of MB AE 90 admixture has been exceeded.

Safety: Chemical goggles and gloves are recommended if transferring or handling large quantities of material.

Packaging

MB AE 90 admixture is supplied in 55 gal (208 L) drums, 275 gal (1040 L) totes and by bulk delivery.

Related Documents

Material Safety Data Sheets: MB AE 90 admixture.

Additional Information

For additional information on MB AE 90 admixture, or its use in developing a concrete mixture with special performance characteristics, contact your Degussa Admixtures, Inc. representative.

Degussa Admixtures, Inc. is a leading provider of innovative chemical admixtures and silica fume for specialty concrete used in the ready mix, precast, manufactured concrete products, underground construction and paving markets in the United States and Canada. The Company's respected Master Builders brand products are used to improve the placing, pumping, finishing, appearance and performance characteristics of concrete.

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POLYHEED® 1020

Mid-Range Water-Reducing Admixture

3	02-30100	Product Data
	03-40100	Cast-in-Place Concrete
	03-70100	Precast Concrete
	03-70100	Mass Concrete

Description

PolyHeed 1020 is a patent-pending ready-to-use mid-range water-reducing admixture. PolyHeed 1020 admixture, based on Glenium® technology, is very effective in producing concrete with different levels of workability for applications such as pumping and flatwork. PolyHeed 1020 admixture is also very effective in producing concrete with enhanced finishing characteristics. PolyHeed 1020 admixture meets ASTM C 494 requirements for Type A, water-reducing, and Type F, high-range water-reducing, admixtures.

Applications

Recommended for use in:

- Conventionally-placed concrete mixtures containing a wide range of cements, granulated slag, Class C and F fly ashes, silica fume and manufactured sands
- Reinforced, precast, prestressed, light-weight or normal-weight concrete and pumped concrete
- Residential/commercial flatwork and formed surfaces
- Concrete where 5 to 20% water reduction is desired
- Concrete where normal setting times are required
- Concrete where enhanced finishability is desired
- Concrete where flowability and increased durability are needed
- Rheodynamic® Self-Consolidating Concrete
- 4x4™ Concrete

Features

- Can be used in a wide variety of concrete mixtures as a multi-purpose admixture meeting the performance requirements for ASTM Type A or Type F admixtures
- Dosage flexibility - provides up to 20% water reduction
- Reduced water content for a given level of workability
- Provides better slump retention
- Provides excellent workability of plastic concrete
- Enhanced later-age strength
- Excellent finishability, even with manufactured sands and in lean mixes

Benefits

- Faster setting at higher dosages compared to other mid-range water-reducing admixtures
- Enhanced concrete strength and durability
- Increased ease in finishing concrete
- Provides lower in-place cost
- Increases service life of structures

Performance Characteristics

Setting Time: Concrete produced with PolyHeed 1020 admixture sets faster than a mixture containing a typical mid-range water-reducing admixture.

Mixture Data: 517 lb/yd³ (307 kg/m³) of Type I/II cement; slump 5 in. (125 mm); non-air-entrained concrete; Admixture dosage adjusted for 8% water reduction.

Compressive Strength: Concrete produced with PolyHeed 1020 admixture achieves higher compressive strength at later ages compared to plain concrete and concrete mixtures produced with a typical mid-range water-reducing admixture

Mixture Data: 517 lb/yd³ (307 kg/m³) of Type I/II cement; slump 5 in. (125mm); non-air entrained concrete; Admixture dosage adjusted for 12% water reduction.

Setting Time (h:min.)

Mixture	Initial	Difference
Reference	4:48	-
Ref. Mid-Range		
Water-Reducer	6:12	+ 1:24
PolyHeed 1020	5:18	+ 0:30

Compressive Strength psi (MPa)

Mixture	1 Day	7 Day	28 Day
Plain	1330 (9.2)	3670 (25.3)	5080 (35.0)
Ref. Mid-Range			
Water-Reducer	1760 (12.1)	5160 (35.6)	6720 (46.3)
PolyHeed 1020	1940 (13.4)	5370 (37.0)	7150 (49.3)

Note: The data shown are based upon controlled laboratory tests. Reasonable variations from the results shown here may be experienced as a result of differences in concrete making materials and jobsite conditions.

Guidelines for Use

Dosage: PolyHeed® 1020 admixture has a recommended dosage range of 3 to 12 fl oz/cwt (195 to 780 mL/100 kg) of cementitious materials for most concrete mixtures. A dosage range of 3 to 5 fl oz/cwt (195 to 325 mL/100 kg) is typical for Type A applications and up to 12 fl oz/cwt (780 mL/100 kg) for mid-range and high-range applications. Because of variations in concrete materials, job site conditions, and/or applications, dosages outside of the recommended range may be required. In such cases, contact your Degussa Admixtures, Inc. representative.

Mixing: PolyHeed 1020 admixture can be added with the initial batch water or at the end of the batching sequence.

Product Notes

Corrosivity – Non-Chloride, Non-Corrosive: PolyHeed 1020 admixture will neither initiate nor promote corrosion of reinforcing or prestressing steel embedded in concrete, or of galvanized steel floor and roof systems. Neither calcium chloride nor other chloride-based ingredients are used in the manufacture of PolyHeed 1020 admixture. In all concrete applications, PolyHeed 1020 admixture conforms to the most stringent or minimum chloride ion limits currently suggested by construction industry standards and practices.

Compatibility: PolyHeed 1020 admixture is compatible with most admixtures and can be used in combination with other Degussa Admixtures, Inc. admixtures, unless stated otherwise. When used in conjunction with other admixtures, each admixture must be dispensed separately into the concrete mixture.

PolyHeed 1020 admixture is designed to be used with MB-VR™ and MB-AE™ 90 air-entraining admixtures when the production of air-entrained concrete is desired. **Do not use PolyHeed 1020 admixture in combination with naphthalene-based admixtures.** Erratic performance in slump may be experienced.

Storage and Handling

Storage Temperature: PolyHeed 1020 admixture should be stored between 35 and 105 °F (2 and 41 °C). If PolyHeed 1020 admixture freezes, thaw at 40 °F (5 °C) or above and completely reconstitute using mild mechanical agitation. **Do not use pressurized air for agitation.**

Shelf Life: PolyHeed 1020 admixture has a minimum shelf life of 12 months. Depending on storage conditions, the shelf life may be greater than stated. Please contact your Degussa Admixtures, Inc. representative regarding suitability for use and dosage recommendations if the shelf life of PolyHeed 1020 admixture has been exceeded.

Dispensing: Consult your Degussa Admixtures, Inc. representative for the proper dispensing equipment for PolyHeed 1020 admixture.

Packaging

PolyHeed 1020 admixture is supplied in 55 gal (208 L) drums, 275 gal (1040 L) totes, and by bulk delivery.

Related Documents

Material Safety Data Sheets: PolyHeed 1020 admixture

Additional Information

For additional information on PolyHeed 1020 admixture or on its use in developing concrete mixtures with special performance characteristics, contact your Degussa Admixtures, Inc. representative.

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S.W. COLE

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RR3 Box 7230, China Rd., Winslow, ME 04901 TEL (207) 873-4283 FAX (207) 873-4977

Specific Gravity & Absorption - Fine Aggregate ASTM C128

Client Auburn Concrete
Job Name 2005 Trial Batch & Aggregate Testing

Job Number 05-0087
Date 2/8/2005
Tested By MFB

Sample Number 3040G
Sample Identification Concrete Sand

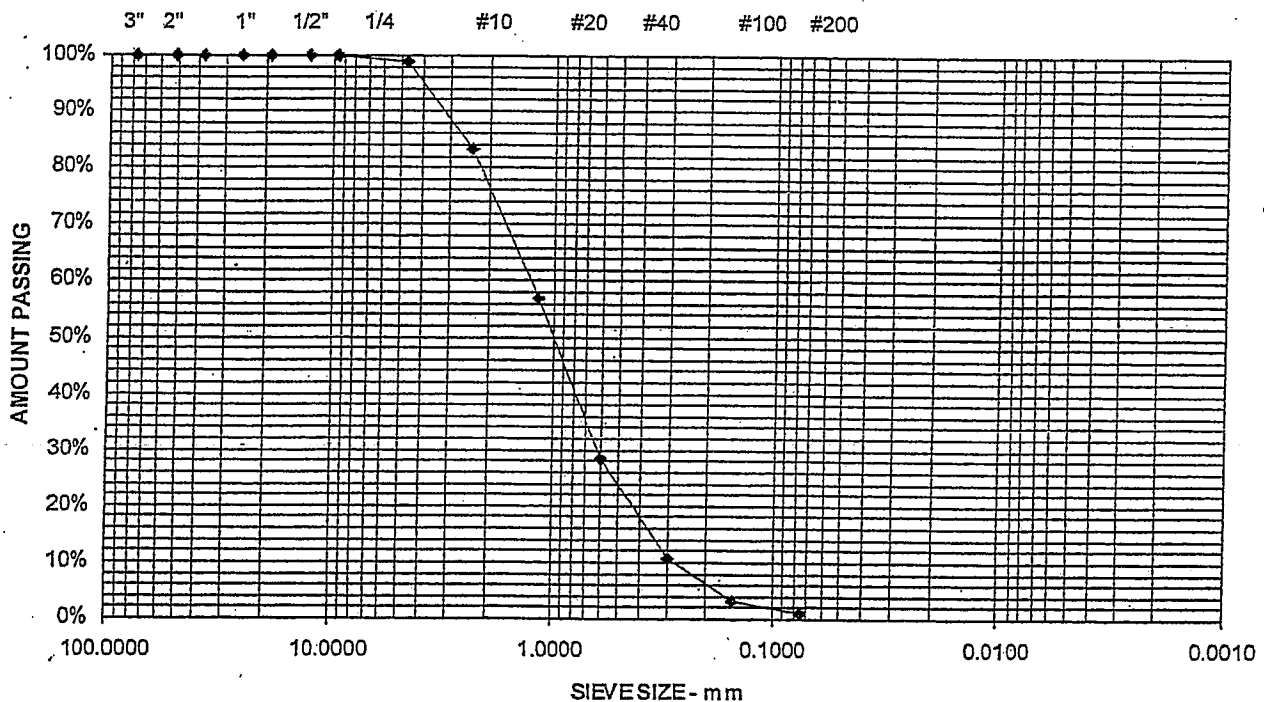
Bulk Specific Gravity	<u>2.62</u>
Apparent Specific Gravity	<u>2.67</u>
Bulk Specific Gravity (Saturated Surface Dry)	<u>2.64</u>
Absorption (Percent)	<u>0.7</u>

Remarks:

Project Name AUBURN - 2005 TRIAL BATCH AND AGGREGATE TESTING
 Client AUBURN CONCRETE
 Material Type CONCRETE SAND
 Material Source PORTLAND SAND & GRAVEL

Project Number 05-0087
 Lab ID 3040G
 Date Received 2/7/2005
 Date Complete 2/7/2005
 Tested By MICHAEL BISSON

STANDARD DESIGNATION (mm/um)	SIEVE SIZE	AMOUNT PASSING (%)	703.01 SPECIFICATIONS (%)
150 mm	6"	100	
100 mm	4"	100	
75 mm	3"	100	
50 mm	2"	100	
38.1 mm	1-1/2"	100	
25.0 mm	1"	100	
19.0 mm	3/4"	100	
12.5 mm	1/2"	100	
9.5 mm	3/8"	100	100
4.75 mm	No. 4	99	95 - 100
2.36 mm	No. 8	83	80 - 100
1.18 mm	No. 16	57	50 - 85
600 um	No. 30	28	25 - 60
300 um	No. 50	11	10 - 30
150 um	No. 100	3	2 - 10
75 um	No. 200	1.0	0.0 - 5.0



Comments

Roger E. Domingo
 Roger E. Domingo



S.W. COLE
ENGINEERING, INC.

SPECIFIC GRAVITY & ABSORPTION - COARSE AGGREGATE
ASTM C127

PROJECT NUMBER: 05-0087

REPORT DATE: 2/8/05

PROJECT NAME: 2005 Trial Batch & Aggregate Testing

TESTED BY: MFB

CLIENT: Auburn Concrete

SAMPLE NUMBER: 3042G

SAMPLE IDENTIFICATIONS: 3/4" Crushed Stone

BULK SPECIFIC GRAVITY	<u>2.60</u>
APPARENT SPECIFIC GRAVITY	<u>2.67</u>
BULK SPECIFIC GRAVITY (SATURATED SURFACE DRY)	<u>2.62</u>
ABSORPTION (PERCENT)	<u>0.7</u>

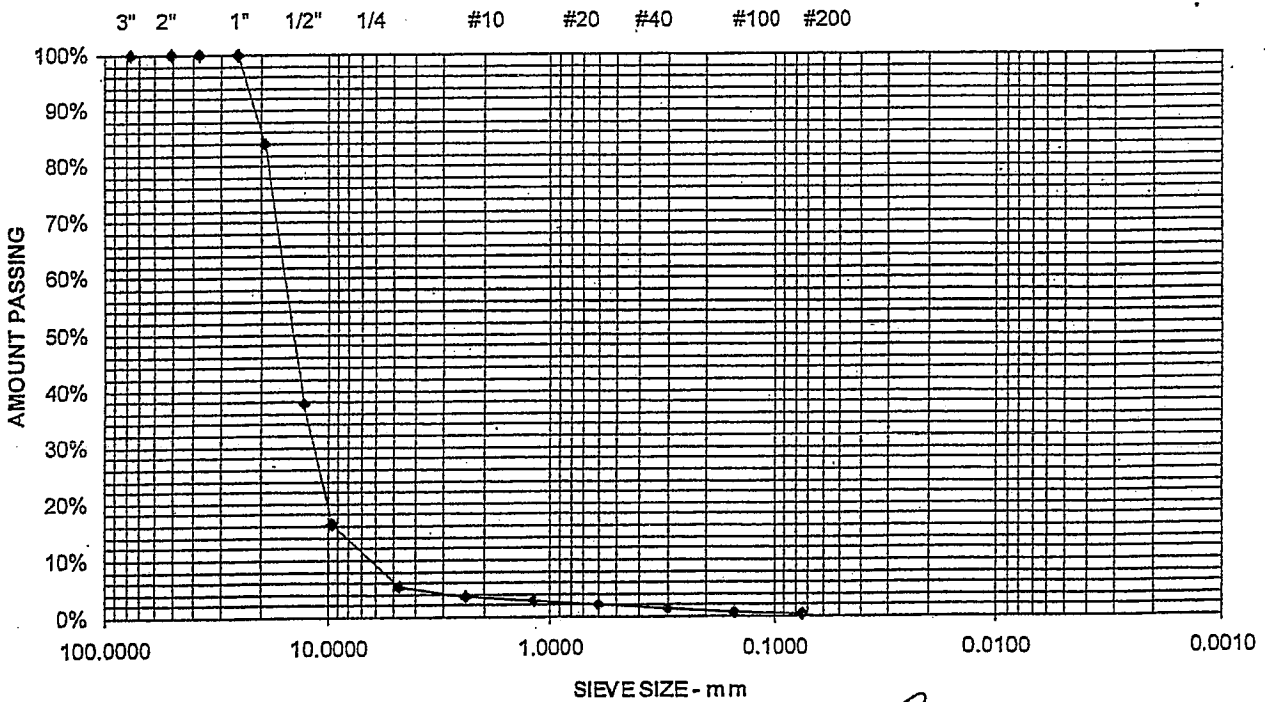
REMARKS:



Project Name **AUBURN - 2005 TRIAL BATCH AND AGGREGATE TESTING**
 Client **AUBURN CONCRETE**
 Material Type **3/4" STONE**
 Material Source **CHRISTIAN HILL QUARRY**

Project Number **05-0087**
 Lab ID **3042G**
 Date Received **2/7/2005**
 Date Complete **2/7/2005**
 Tested By **MICHAEL BISSON**

<u>STANDARD</u> <u>DESIGNATION (mm/um)</u>	<u>SIEVE SIZE</u>	<u>AMOUNT PASSING (%)</u>	<u>SPECIFICATIONS (%)</u>
150 mm	6"	100	
100 mm	4"	100	
75 mm	3"	100	
50 mm	2"	100	
38.1 mm	1-1/2"	100	
25.0 mm	1"	100	
19.0 mm	3/4"	84	
12.5 mm	1/2"	38	
9.5 mm	3/8"	16	
4.75 mm	No. 4	5	
2.36 mm	No. 8	4	
1.18 mm	No. 16	3	
600 um	No. 30	2	
300 um	No. 50	1	
150 um	No. 100	1	
75 um	No. 200	0.5	



Comments

Roger E. Domingo
 Roger E. Domingo

AUBURN CONCRETE REGD.
 C/O R.A. CUMMINGS INC.
 P.O. BOX 1747, AUBURN, MAINE, U.S.A.
 04210



145, BOULEVARD CENTENAIRE, ST-BASILE
 COMTE DE PORTNEUF, QUÉBEC, CANADA, G0A 3G0
 TÉLÉPHONE: (418) 329-2100
 TÉLÉCOPIEUR: (418) 329-3436

**Ciment
 Québec**

ANALYSIS CERTIFICATE

Date : February 2005
 Cement type : Portland Type II

PHYSICAL TESTS

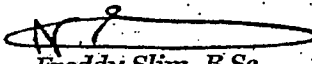
Setting time (Vicat)	Initial	110 minutes	
	Final	235 minutes	
Fineness (Air permeability)		336 m ² /kg	
Air content of mortar		7 %	
False set		70 %	
Fineness (Passing 45 µm sieve)		95 %	
Soundness (Autoclave expansion)		0.06 %	
Compressive strength	3 days	27.5 Mpa	3990 psi
	7 days	32.3 Mpa	4690 psi
	28 days (Jan-05)	37.1 Mpa	5380 psi
Expansion of Mortar Bars Stored in Water (14 days)		0.019 %	
Sulphate resistance (14 days)		0.032 %	

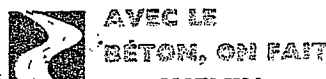
CHEMICAL ANALYSIS

Silicon dioxide (SiO ₂)	20.2 %
Aluminium oxide (Al ₂ O ₃)	4.8 %
Ferric oxide (Fe ₂ O ₃)	3.5 %
Total calcium oxide (CaO)	62.5 %
Free calcium oxide (CaO)	1.6 %
Magnesium oxide (MgO)	2.3 %
Sulfur trioxide (SO ₃)	3.9 %
Loss on ignition	0.7 %
Insoluble residue	0.3 %
Alkalies (Na ₂ O equiv.)	0.9 %
Tricalcium silicate (C ₃ S)	52.5 %
Dicalcium silicate (C ₂ S)	18.2 %
Tricalcium aluminate (C ₃ A)	7 %
Tricalcium aluminoferrite (C ₄ AF)	10.8 %

We hereby certify that the cement delivered complies with current requirements of US standard specification ASTM C 150, Type II and AASHTO M 85.

²ASTM
 * For any information regarding this certificate, please contact our technical service at (418) 329-2100, ext. 220.


 Freddy Slim, B.Sc.
 Chief Chemist



03300 Cast-in-Place Concrete

03300.3 R. W. Gillespie Testing Reports

R. W. GILLESPIE & ASSOCIATES, INC.

Page 1 of 1

86 Industrial Park Road, Suite 4, Saco, ME 04072 207-286-8008
 200 International Drive, Suite 170, Portsmouth, NH 03801 603-427-0244
 P. O. Box 289, Augusta, ME 04332-0289 207-623-4914
CONCRETE TEST/PLACEMENT REPORT

Project Name:	Pine Tree Shopping Center (Retail #2 & 3)	Date Cylinders Cast:	27-Jul-06
Project No:	908-25	Concrete Supplier:	Auburn
Weather Conditions:	Sunny	General Contractor:	Benchmark
Method of Placement:	Tailgate	Design Strength:	3,000
Admixtures:	Polyheed 1020, Pozzoloth 100XR, Micro Air	Max Agg. Size:	3/4
Placement Location:	Continuous Footings: E/3 to 1/A along F and 1 Lines, Spread Footings: All of 0.1 Line		
Test Cylinder Location:	F, 2		

Date Report Issued: AUG 28 2006

6x12 Cylinders	4	Cast by	Nathan D. Strout	Time
Load No.	1	Slump (in) ASTM C 143	2.5	Batched @
Ticket No.	101722	Air (%F)	85	Arrived @
Truck No.	93	Concrete (%F) ASTM C 1064	85	Total Time
Cubic Yds.	10	Air Content (%) ASTM C 231	3.0	

*Concrete sampled by ASTM C 172

Specimen Storage ASTM C 31: Field cure days: 1

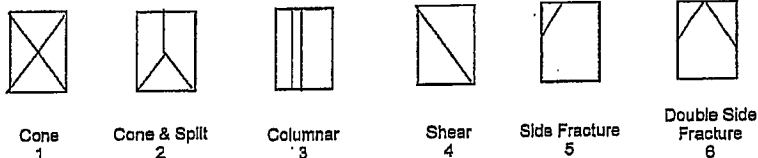
Date received: 28-Jul-06

Condition of Cylinders: Good

Lab No.	Test Date	Avg Dia (in)	Area (in ²)	Age (Days)	Load (lbs)	Compressive Strength (psi)	Break type
55114	03-Aug-06	6.010	28.37	7	103,660	3650	3
55115	24-Aug-06	6.009	28.36	28	130,600	4605	5
55116	24-Aug-06	6.009	28.36	28	128,340	4525	5
55117	HOLD			HOLD			

*Concrete compressive strength by ASTM C 39

Types of Breaks



Load	Ticket Number	Truck Number	Cubic Yds	Slump (inches)	Air Temp (°F)	Conc Temp (°F)	(%) Air Content	Time (min.)
2	101725	82	10	--	--	--	--	40
3	101728	46	10	--	--	--	--	--

Remarks:

Checked by: 
 Matthew T. Grady, Manager of MTS

For: Matt Grady