

## REPORT OF CONCRETE FIELD & LABORATORY TESTING

**CLIENT:** DN Tanks  
 11 Teal Road  
 Wakefield, MA 01880  
 Attn: Mr. Jake Sreca

**PROJECT:** Middletown CT  
 224 Talcott Ridge Drive  
 Middletown, CT

**DATE:** September 17, 2020

**REPORT #:** 20-07-161-008

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**General Location:** Exterior Wall and Dome Panels

**Date Cast:** 8/20/2020  
**Field Rep:** Stephen Sturges  
**Contractor:** DN Tanks  
**Concrete Supplier:** CT Ready Mix  
**Concrete Admixtures:** Mix B  
**Air Temp:** 83 °F  
**Weather:** Sunny  
**Nominal Size of Aggr:** 3/4"  
**Date Received by Lab:** 8/21/2020

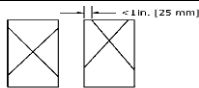
**FIELD TEST RESULTS (Sampled in accordance with ASTM C172)**

| TICKET # | *# CYL | SLUMP TEST (in)<br>(ASTM C143) | AIR CONTENT (%)<br>(ASTM C231) | TEMPERATURE (°F)<br>(ASTM C1064) | ELAPSED TIME |          |             |
|----------|--------|--------------------------------|--------------------------------|----------------------------------|--------------|----------|-------------|
|          |        |                                |                                |                                  | Batch        | Final    | Total (Min) |
| 1008261  | 6      | 5.00"                          | 5.40%                          | 82 °F                            | 9:08 AM      | 10:32 AM | 84          |
|          |        |                                |                                |                                  |              |          |             |
|          |        |                                |                                |                                  |              |          |             |
|          |        |                                |                                |                                  |              |          |             |

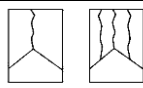
*\*Specimens molded/conditioned in accordance with ASTM C31/ASTM C1231*

**LABORATORY COMPRESSIVE STRENGTH TESTING (ASTM C39)**

| Date of Test | Cylinder ID | Age | Cure | Avg Measured Diameter (in) | Cross Sectional (in <sup>2</sup> ) | PSI   | Max. Load | Break Type |
|--------------|-------------|-----|------|----------------------------|------------------------------------|-------|-----------|------------|
| 08/24/20     | 1A          | 4   | LAB  | 6.00"                      | 28.26"                             | 3,800 | 107,280   | 2          |
| 08/27/20     | 1B          | 7   | LAB  | 6.00"                      | 28.26"                             | 4,120 | 116,320   | 2          |
| 08/27/20     | 1C          | 7   | LAB  | 6.00"                      | 28.26"                             | 4,250 | 120,020   | 2          |
| 09/17/20     | 1D          | 28  | LAB  | 6.00"                      | 28.26"                             | 4,770 | 134,750   | 2          |
| 09/17/20     | 1E          | 28  | LAB  | 6.00"                      | 28.26"                             | 5,050 | 142,650   | 5          |
|              | 1F          |     | HOLD |                            |                                    |       |           |            |
|              |             |     |      |                            |                                    |       |           |            |
|              |             |     |      |                            |                                    |       |           |            |
|              |             |     |      |                            |                                    |       |           |            |



**Type 1**  
Reasonably well-formed cones on both ends, less than 1 in. (25 mm) of cracking through caps



**Type 2**  
Well-formed cone on one end, vertical cracks running through caps, no well-defined cone on other end



**Type 3**  
Columnar vertical cracking through both ends, no well-formed cones



**Type 4**  
Diagonal fracture with no cracking through ends; tap with hammer to distinguish from Type 1



**Type 5**  
Side fractures at top or bottom (occur commonly with unbonded caps)



**Type 6**  
Similar to Type 5 but end of cylinder is pointed

|                                  |                 |                          |                                  |
|----------------------------------|-----------------|--------------------------|----------------------------------|
| <b>Specific Sample Location:</b> | Wall Panel WA-4 |                          |                                  |
| <b>Yards Placed:</b>             | 40.0            | <b>yards<sup>3</sup></b> | <b>Design Strength:</b> 4000 psi |
| <b>Density:</b>                  |                 |                          |                                  |
| <b>Remarks:</b>                  |                 |                          |                                  |

**Reviewed By:** Darlene Daniels

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**General Location:** Exterior Wall and Dome Panels

**Date Cast:** 8/20/2020  
**Field Rep:** Stephen Sturges  
**Contractor:** DN Tanks  
**Concrete Supplier:** CT Ready Mix  
**Concrete Admixtures:** Mix B  
**Air Temp:** 83 °F  
**Weather:** Sunny  
**Nominal Size of Aggr:** 3/4"  
**Date Received by Lab:** 8/21/2020

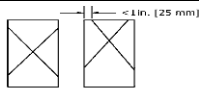
**FIELD TEST RESULTS (Sampled in accordance with ASTM C172)**

| TICKET # | *# CYL | SLUMP TEST (in)<br>(ASTM C143) | AIR CONTENT (%)<br>(ASTM C231) | TEMPERATURE (°F)<br>(ASTM C1064) | ELAPSED TIME |          |             |
|----------|--------|--------------------------------|--------------------------------|----------------------------------|--------------|----------|-------------|
|          |        |                                |                                |                                  | Batch        | Final    | Total (Min) |
| 1008262  | 6      | 4.75"                          | 5.00%                          | 78 °F                            | 10:00 AM     | 11:46 AM | 106         |
|          |        |                                |                                |                                  |              |          |             |
|          |        |                                |                                |                                  |              |          |             |
|          |        |                                |                                |                                  |              |          |             |

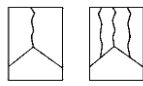
*\*Specimens molded/conditioned in accordance with ASTM C31/ASTM C1231*

**LABORATORY COMPRESSIVE STRENGTH TESTING (ASTM C39)**

| Date of Test | Cylinder ID | Age | Cure | Avg Measured Diameter (in) | Cross Sectional (in <sup>2</sup> ) | PSI   | Max. Load | Break Type |
|--------------|-------------|-----|------|----------------------------|------------------------------------|-------|-----------|------------|
| 08/24/20     | 2A          | 4   | LAB  | 6.00"                      | 28.26"                             | 3,710 | 104,880   | 2          |
| 08/27/20     | 2B          | 7   | LAB  | 6.00"                      | 28.26"                             | 3,890 | 109,990   | 2          |
| 08/27/20     | 2C          | 7   | LAB  | 6.00"                      | 28.26"                             | 4,000 | 112,940   | 2          |
| 09/17/20     | 2D          | 28  | LAB  | 6.00"                      | 28.26"                             | 4,420 | 124,940   | 2          |
| 09/17/20     | 2E          | 28  | LAB  | 6.00"                      | 28.26"                             | 4,510 | 127,360   | 2          |
|              | 2F          |     | HOLD |                            |                                    |       |           |            |
|              |             |     |      |                            |                                    |       |           |            |
|              |             |     |      |                            |                                    |       |           |            |
|              |             |     |      |                            |                                    |       |           |            |



**Type 1**  
Reasonably well-formed cones on both ends, less than 1 in. (25 mm) of cracking through caps



**Type 2**  
Well-formed cone on one end, vertical cracks running through caps, no well-defined cone on other end



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Columnar vertical cracking through both ends, no well-formed cones



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Diagonal fracture with no cracking through ends; tap with hammer to distinguish from Type 1



**Type 5**  
Side fractures at top or bottom (occur commonly with unbonded caps)



**Type 6**  
Similar to Type 5 but end of cylinder is pointed

|                                  |                 |                          |                                  |
|----------------------------------|-----------------|--------------------------|----------------------------------|
| <b>Specific Sample Location:</b> | Wall Panel WA-4 |                          |                                  |
| <b>Yards Placed:</b>             | 40.0            | <b>yards<sup>3</sup></b> | <b>Design Strength:</b> 4000 psi |
| <b>Density:</b>                  |                 |                          |                                  |
| <b>Remarks:</b>                  |                 |                          |                                  |

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**Date Cast:** 8/20/2020  
**Field Rep:** Stephen Sturges  
**Contractor:** DN Tanks  
**Concrete Supplier:** CT Ready Mix  
**Concrete Admixtures:** Mix B  
**Air Temp:** 83 °F  
**Weather:** Sunny  
**Nominal Size of Aggr:** 3/4"  
**Date Received by Lab:** 8/21/2020

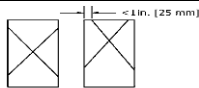
**FIELD TEST RESULTS (Sampled in accordance with ASTM C172)**

| TICKET # | *# CYL | SLUMP TEST (in)<br>(ASTM C143) | AIR CONTENT (%)<br>(ASTM C231) | TEMPERATURE (°F)<br>(ASTM C1064) | ELAPSED TIME |         |             |
|----------|--------|--------------------------------|--------------------------------|----------------------------------|--------------|---------|-------------|
|          |        |                                |                                |                                  | Batch        | Final   | Total (Min) |
| 1008265  | 6      | 5.00"                          | 4.90%                          | 78 °F                            | 11:59 AM     | 1:34 PM | 95          |
|          |        |                                |                                |                                  |              |         |             |
|          |        |                                |                                |                                  |              |         |             |
|          |        |                                |                                |                                  |              |         |             |

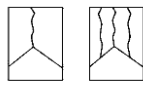
*\*Specimens molded/conditioned in accordance with ASTM C31/ASTM C1231*

**LABORATORY COMPRESSIVE STRENGTH TESTING (ASTM C39)**

| Date of Test | Cylinder ID | Age | Cure | Avg Measured Diameter (in) | Cross Sectional (in <sup>2</sup> ) | PSI   | Max. Load | Break Type |
|--------------|-------------|-----|------|----------------------------|------------------------------------|-------|-----------|------------|
| 08/24/20     | 3A          | 4   | LAB  | 6.00"                      | 28.26"                             | 3,790 | 107,240   | 2          |
| 08/27/20     | 3B          | 7   | LAB  | 6.00"                      | 28.26"                             | 3,880 | 109,730   | 2          |
| 08/27/20     | 3C          | 7   | LAB  | 6.00"                      | 28.26"                             | 3,860 | 109,120   | 2          |
| 09/17/20     | 3D          | 28  | LAB  | 6.00"                      | 28.26"                             | 4,160 | 117,630   | 2          |
| 09/17/20     | 3E          | 28  | LAB  | 6.00"                      | 28.26"                             | 4,390 | 124,130   | 5          |
|              | 3F          |     | HOLD |                            |                                    |       |           |            |
|              |             |     |      |                            |                                    |       |           |            |
|              |             |     |      |                            |                                    |       |           |            |
|              |             |     |      |                            |                                    |       |           |            |



**Type 1**  
Reasonably well-formed cones on both ends, less than 1 in. (25 mm) of cracking through caps



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Well-formed cone on one end, vertical cracks running through caps, no well-defined cone on other end



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Diagonal fracture with no cracking through ends; top with hammer to distinguish from Type 1



**Type 5**  
Side fractures at top or bottom (occur commonly with unbonded caps)



**Type 6**  
Similar to Type 5 but end of cylinder is pointed

|                                  |                 |                          |                                  |
|----------------------------------|-----------------|--------------------------|----------------------------------|
| <b>Specific Sample Location:</b> | Wall Panel WB-4 |                          |                                  |
| <b>Yards Placed:</b>             | 40.0            | <b>yards<sup>3</sup></b> | <b>Design Strength:</b> 4000 psi |
| <b>Density:</b>                  |                 |                          |                                  |
| <b>Remarks:</b>                  |                 |                          |                                  |

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**Date Cast:** 8/20/2020  
**Field Rep:** Stephen Sturges  
**Contractor:** DN Tanks  
**Concrete Supplier:** CT Ready Mix  
**Concrete Admixtures:** Mix B  
**Air Temp:** 83 °F  
**Weather:** Sunny  
**Nominal Size of Aggr:** 3/4"  
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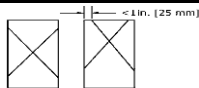
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|----------|--------|--------------------------------|--------------------------------|----------------------------------|--------------|---------|-------------|
|          |        |                                |                                |                                  | Batch        | Final   | Total (Min) |
| 1008269  | 6      | 4.75"                          | 5.60%                          | 82 °F                            | 1:34 PM      | 3:04 PM | 90          |
|          |        |                                |                                |                                  |              |         |             |
|          |        |                                |                                |                                  |              |         |             |
|          |        |                                |                                |                                  |              |         |             |

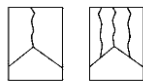
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**LABORATORY COMPRESSIVE STRENGTH TESTING (ASTM C39)**

| Date of Test | Cylinder ID | Age | Cure | Avg Measured Diameter (in) | Cross Sectional (in <sup>2</sup> ) | PSI   | Max. Load | Break Type |
|--------------|-------------|-----|------|----------------------------|------------------------------------|-------|-----------|------------|
| 08/24/20     | 4A          | 4   | LAB  | 6.00"                      | 28.26"                             | 3,590 | 101,400   | 2          |
| 08/27/20     | 4B          | 7   | LAB  | 6.00"                      | 28.26"                             | 3,720 | 105,010   | 2          |
| 08/27/20     | 4C          | 7   | LAB  | 6.00"                      | 28.26"                             | 3,740 | 105,770   | 2          |
| 09/17/20     | 4D          | 28  | LAB  | 6.00"                      | 28.26"                             | 4,600 | 129,940   | 2          |
| 09/17/20     | 4E          | 28  | LAB  | 6.00"                      | 28.26"                             | 4,670 | 131,930   | 5          |
|              | 4F          |     | HOLD |                            |                                    |       |           |            |
|              |             |     |      |                            |                                    |       |           |            |
|              |             |     |      |                            |                                    |       |           |            |
|              |             |     |      |                            |                                    |       |           |            |



**Type 1**  
Reasonably well-formed cone on both ends, less than 1 in. [25 mm] of cracking through caps



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Side fractures at top or bottom (occur commonly with unbonded caps)



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Similar to Type 5 but end of cylinder is pointed

|                                  |                 |                          |                                  |
|----------------------------------|-----------------|--------------------------|----------------------------------|
| <b>Specific Sample Location:</b> | Wall Panel WB-4 |                          |                                  |
| <b>Yards Placed:</b>             | 40.0            | <b>yards<sup>3</sup></b> | <b>Design Strength:</b> 4000 psi |
| <b>Density:</b>                  |                 |                          |                                  |
| <b>Remarks:</b>                  |                 |                          |                                  |

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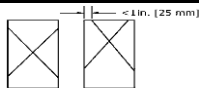
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|----------|--------|--------------------------------|--------------------------------|----------------------------------|--------------|---------|-------------|
|          |        |                                |                                |                                  | Batch        | Final   | Total (Min) |
| 1008272  | 6      | 5.50"                          | 6.00%                          | 84 °F                            | 2:02 PM      | 3:52 PM | 110         |
|          |        |                                |                                |                                  |              |         |             |
|          |        |                                |                                |                                  |              |         |             |
|          |        |                                |                                |                                  |              |         |             |

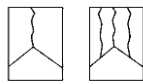
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|--------------|-------------|-----|------|----------------------------|------------------------------------|-------|-----------|------------|
| 08/24/20     | 5A          | 4   | LAB  | 6.00"                      | 28.26"                             | 3,460 | 97,790    | 2          |
| 08/27/20     | 5B          | 7   | LAB  | 6.00"                      | 28.26"                             | 3,690 | 104,170   | 2          |
| 08/27/20     | 5C          | 7   | LAB  | 6.00"                      | 28.26"                             | 3,710 | 104,820   | 2          |
| 09/17/20     | 5D          | 28  | LAB  | 6.00"                      | 28.26"                             | 4,130 | 116,580   | 2          |
| 09/17/20     | 5E          | 28  | LAB  | 6.00"                      | 28.26"                             | 4,170 | 117,860   | 5          |
|              | 5F          |     | HOLD |                            |                                    |       |           |            |
|              |             |     |      |                            |                                    |       |           |            |
|              |             |     |      |                            |                                    |       |           |            |
|              |             |     |      |                            |                                    |       |           |            |



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Side fractures at top or bottom (occur commonly with unbonded caps)



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Similar to Type 5 but end of cylinder is pointed

|                                  |                     |                          |                                  |
|----------------------------------|---------------------|--------------------------|----------------------------------|
| <b>Specific Sample Location:</b> | Panel DA-4 and DB-4 |                          |                                  |
| <b>Yards Placed:</b>             | 40.0                | <b>yards<sup>3</sup></b> | <b>Design Strength:</b> 4000 psi |
| <b>Density:</b>                  |                     |                          |                                  |
| <b>Remarks:</b>                  |                     |                          |                                  |

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