



## Concrete Cylinder Test Report

### PROJECT INFO

ASTM C31, ASTM C39, AASHTO T23, AASHTO T22, ASTM C172, AASHTO R60

|                          |                               |                   |                         |
|--------------------------|-------------------------------|-------------------|-------------------------|
| Client                   | HRC                           | Date Of Placement | 10/11/2019              |
| Project Name             | HMA Resurfacing 20+ Locations | Specimen Type     | Concrete Cylinder       |
| Project Number           | 2019086C                      | Contractor        | Major Cement            |
| Project Location         | Detroit, MI                   | Concrete Supplier | Superior Materials, LLC |
| MDOT Job Number          | 205935A, 207914A              | Field Tested By   | Andrew Patterson        |
| MDOT Control Section     | 82000                         | Date Issued       | 11/08/2019              |
| Results Recorded In      | English Units                 |                   |                         |
| Supplier Mix Description | Structure Adjustments         |                   |                         |

### DESIGN PARAMETER

|                                   |                   |                                    |      |
|-----------------------------------|-------------------|------------------------------------|------|
| Mix Design Number                 | 0543 DDHE75E80320 |                                    |      |
| Design Compressive Strength (psi) | 3500              |                                    |      |
| Air (% Max)                       | 8.5               | Slump (in Max)                     | 6.00 |
| Air (% Min)                       | 5.5               | Slump (in Min)                     | 3.50 |
|                                   |                   | Unit Weight (lbs/ft <sup>3</sup> ) |      |

### TESTING DATA

| Placed      | 10.00     | +/- yds <sup>3</sup> /ft <sup>3</sup> of concrete at the following location: On Third st at the corner of W Baltimore st |                           |                                              |               |                          |                       |                   |                                                                         |
|-------------|-----------|--------------------------------------------------------------------------------------------------------------------------|---------------------------|----------------------------------------------|---------------|--------------------------|-----------------------|-------------------|-------------------------------------------------------------------------|
| Time Tested | Truck Num | Slump ASTM C143 (in)                                                                                                     | Air ASTM C231 or C173 (%) | Unit Weight ASTM C138 (lbs/ft <sup>3</sup> ) | Air Temp (°F) | Mix Temp ASTM C1064 (°F) | Concrete Cylinder Set | Water Added (gal) | Cumulative Concrete Placed At Test (yds <sup>3</sup> /ft <sup>3</sup> ) |
| 12:50 PM    | 3208      | 5.50                                                                                                                     | 6.00                      | 0.0                                          | 69            | 77                       | 1                     | 0                 | 5                                                                       |

### MATERIAL DATA

| Concrete Cylinder Set | Concrete Cylinder Num | Diameter (in) | X-Sec Area (in <sup>2</sup> ) | Weight (lbs) | Fracture Type     | Capping Process | Age Of Concrete Cylinder (Days) | Date Tested | Total Load At Failure (lbs) | Cumulative Strength (psi/mpa) |
|-----------------------|-----------------------|---------------|-------------------------------|--------------|-------------------|-----------------|---------------------------------|-------------|-----------------------------|-------------------------------|
| 1                     | 75985                 | 4.00          | 12.57                         | 8.28         | 3-(Vertical)      | Unbonded Cap    | 3                               | 10/14/2019  | 30560                       | 2430                          |
| 1                     | 75986                 | 4.00          | 12.57                         | 8.28         | 3-(Vertical)      | Unbonded Cap    | 28                              | 11/08/2019  | 76120                       | 6060                          |
| 1                     | 75987                 | 4.00          | 12.57                         | 8.28         | 2-(Cone/Vertical) | Unbonded Cap    | 28                              | 11/08/2019  | 74200                       | 5900                          |

**Average 28 Day Compressive Strength (psi): 5980**

\*Cylinders tested with Unbonded Caps followed ASTM C1231, cylinders tested with Bonded Caps followed ASTM C617.  
\*All Air Content % tests were performed per C231 unless otherwise noted in the remarks.  
\*Inspector was notified of non-conformance items, if any.  
\*Average Compressive Strength results did meet project specifications.

|                      |                    |
|----------------------|--------------------|
| Remarks:             |                    |
| Results Reported To: | HRC(Kevin Surhigh) |
| Report Approved By:  | Brian Gondek       |