



## Concrete Cylinder Test Report

### PROJECT INFO

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

|                      |                               |                   |                         |
|----------------------|-------------------------------|-------------------|-------------------------|
| Client               | HRC                           | Date Of Placement | 10/26/2020              |
| Project Name         | HMA Resurfacing 20+ Locations | Specimen Type     | Concrete Cylinder       |
| Project Number       | 2019086C                      | Contractor        | merlo                   |
| Project Location     | Detroit, MI                   | Concrete Supplier | Superior Materials, LLC |
| MDOT Job Number      | 205935A, 207914A              | Field Tested By   | Jose Vinuya             |
| MDOT Control Section | 82000                         | Date Issued       | 11/23/2020              |

|                          |                      |
|--------------------------|----------------------|
| Results Recorded In      | English Units        |
| Supplier Mix Description | Structure Adjustment |

### DESIGN PARAMETER

|                                   |                   |                |      |                                    |  |
|-----------------------------------|-------------------|----------------|------|------------------------------------|--|
| Mix Design Number                 | 0674 P155E7CQA032 |                |      |                                    |  |
| Design Compressive Strength (psi) | 3500              |                |      |                                    |  |
| Air (% Max)                       | 8.5               | Slump (in Max) | 3.00 | Unit Weight (lbs/ft <sup>3</sup> ) |  |
| Air (% Min)                       | 5.5               | Slump (in Min) | 1.50 |                                    |  |

### TESTING DATA

|        |       |                                                                              |                                                                        |
|--------|-------|------------------------------------------------------------------------------|------------------------------------------------------------------------|
| Placed | 30.00 | +/- yds <sup>3</sup> /ft <sup>3</sup> of concrete at the following location: | Used for curb at M-39/Southfield Road NB from Paul Street to Joy Road. |
|--------|-------|------------------------------------------------------------------------------|------------------------------------------------------------------------|

| 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> ) |
|-------------|-----------|----------------------|---------------------------|----------------------------------------------|---------------|--------------------------|-----------------------|-------------------|-------------------------------------------------------------------------|
| 9:52 AM     | 9127      | 3.00                 | 7.00                      | 0.0                                          | 44            | 65                       | 1                     | 0                 | 10                                                                      |

### 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                     | 81316                 | 4.00          | 12.57                         | 8.46         | 2- (Cone/Vertical) | Unbonded Cap    | 28                              | 11/23/2020  | 75510                       | 6010                          |
| 1                     | 81317                 | 4.00          | 12.57                         | 8.37         | 2- (Cone/Vertical) | Unbonded Cap    | 28                              | 11/23/2020  | 71470                       | 5690                          |

**Average 28 Day Compressive Strength (psi): 5850**

\*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:  | Matthew Johnson    |