MINUMUM QUALIFICATIONS FOR SPECIAL INSPECTORS,

Fabricators, Special Inspection Agencies,
Testing Labs and Laboratory Technicians

CASCADE INPSECTION SERVICES

A. FABRICATORS

A.1. Fabricators: Not Registered or Approved (MBC 2012 Section 1704.2.5.1)

The designated Special Inspector and/or Special Inspection Agency inspecting the Fabricator Shop for compliance with Section 1704.2.5.1 of the Michigan Building Code 2012 (MBC 2012) shall be pre-approved by the Building Department for the specified Category of the fabrication prior to Building Permit issuance. See the specific Category information for minimum qualifications criteria:

- For Structural Steel – See Category B
- For Concrete – See Category C
- For Structural Wood – See Category E

A.2. Fabricators: Registered and Approved (MBC 2012 Section 1704.2.5.2)

Special Inspections are not required for work done on the premises of a registered and approved Fabricator that has a current accreditation from the International Accreditation Services (IAS), a current certification from a nationally recognized organization, or an equivalent certification. Equivalencies are subject to review and acceptance by the Building Department and shall be performed by an approved Special Inspection Agency in accordance with applicable provisions of Sections 1703 and 1704.2.5.2 of the MBC 2012.

The following National Fabricator Certifying Organizations are recognized and acceptable by the Rochester Hills Building Department:

- The American Institute of Steel Construction (AISC) for Fabricators of Structural Steel
- American Steel Joist Institute (SJI) for Fabricators of Steel Joists
- Precast/Prestressed Concrete Institute for Fabricators of Precast and Prestressed Concrete
- Truss Plate Institute (TPI) for Fabricators of Wood Trusses

B. STRUCTURAL STEEL

B. 1. Steel – High Strength Bolting:

The Special Inspector shall comply with at least one of the Education and Experience Requirements <u>and</u> at least one of the Certification Requirements noted below:

Minimum Education and Experience Requirements:

1. Michigan Professional Engineer or Michigan Registered Architect and a minimum of three months of relevant work experience.
2. Bachelor of Science Degree in Engineering, Architecture, or Physical Science and a minimum of six months of relevant work experience.
3. Two years of verified college or technical school and a minimum of one year of relevant work experience.

4. High school or equivalent graduate and a minimum of two years of verified relevant work experience.
5. A minimum of three years of verified relevant work experience.

Minimum Certification Requirements:
1. Current International Code Council (ICC) Certification as a Structural Steel and Bolting Special Inspector.
2. Current American Welding Society (AWS) Certification as a Certified Welding Inspector (CWI).
3. Current AWS Certification as a Certified Associate Welding Inspector (CAWI).

B.2. Steel – Welding:

The Special Inspector shall comply with at least one of the Education and Experience Requirements and at least one of the Certification Requirements noted below:

Minimum Education and Experience Requirements:
1. 5 Years Minimum.

Minimum Certification Requirements:
1. Current American Welding Society (AWS) Certification as a Certified Welding Inspector (CWI).
2. Current AWS Certification as a Certified Associate Welding Inspector (CAWI).
3. Current ICC Certification as a Structural Steel and Welding Special Inspector.

B.3. Steel – Nondestructive Testing (NDT):

The Special Inspector shall comply with at least one of the Education and Experience Requirements and at least one of the Certification Requirements noted below:

Minimum Education and Experience Requirements:
1. As required for The American Society of Nondestructive Testing (ASNT) Level II Certification.

Minimum Certification Requirements:
1. Personnel qualified in accordance with nationally-recognized NDT personnel qualifications practice or standard, such as ANSI/ASNT-CP-189 NDT or SNT-TC-1a NDT.
2. American Society of Nondestructive Testing (ASNT) Level II and a minimum of 120 hours of relevant testing experience or training as determined and approved by an ASNT Level III.

B.4. Steel – Structural Cold-Formed Steel:

The Special Inspector shall comply with at least one of the Education and Experience Requirements and at least one of the Certification Requirements noted below:

Minimum Education and Experience Requirements:
1. Michigan Professional Engineer or Michigan Registered Architect and a minimum of three months of relevant work experience (see Note 1 below).
2. Bachelor of Science Degree in Engineering, Architecture, or Physical Science and a minimum of six months of relevant work experience.
3. Two years of verified college or technical school and a minimum of one year of relevant work experience.
4. High school or equivalent graduate and a minimum of two years of verified relevant work experience.
5. A minimum of three years of verified relevant work experience.

Minimum Certification Requirements:
1. Current ICC certification as a Commercial Building Inspector.
2. Current ICC certification as a Residential Building Inspector.

C. CONCRETE CONSTRUCTION

C.1. Concrete – Reinforced Concrete:

The Special Inspector shall comply with at least one of the Education and Experience Requirements and at least one of the Certification Requirements noted below:

Minimum Education and Experience Requirements:
1. Michigan Professional Engineer or Michigan Registered Architect and a minimum of three months of relevant work experience.
2. Bachelor of Science Degree in Engineering, Architecture, or Physical Science and a minimum of six months of relevant work experience.
3. Two years of verified college or technical school and a minimum of one year of relevant work experience.
4. High school or equivalent graduate and a minimum of two years of verified relevant work experience.
5. A minimum of three years of verified relevant work experience.

Minimum Certification Requirements:
1. Current ICC certification as a Reinforced Concrete Special Inspector.
2. Current American Concrete Institute (ACI) certification as a Concrete Construction Special Inspector.
3. Current ACI certification as a Concrete Field Testing Technician Grade 1.

C.2. Concrete – Pre-Stressed/Precast:

The Special Inspector shall comply with at least one of the Education and Experience Requirements and at least one of the Certification Requirements noted below:

Minimum Education and Experience Requirements:
1. Michigan Professional Engineer or Michigan Registered Architect and a minimum of three months of relevant work experience.
2. Bachelor of Science Degree in Engineering, Architecture, or Physical Science and a minimum of six months of relevant work experience.
3. Two years of verified college or technical school and a minimum of one year of relevant work experience.
4. High school or equivalent graduate and a minimum of two years of verified relevant work experience.
5. A minimum of three years of verified relevant work experience.

Minimum Certification Requirements:
1. Current ICC certification as a Pre-stressed Concrete Special Inspector and as a Reinforced Concrete Special Inspector.
2. Current ACI certification as a Concrete Construction Special Inspector.
3. Current ACI certification as a Concrete Field Testing Technician Grade 1.

C.3. Concrete – Post-Installed Structural Anchor in Concrete:

The Special Inspector shall comply with at least one of the Education and Experience Requirements and at least one of the Certification Requirements noted below:

Minimum Education and Experience Requirements:

1. Michigan Professional Engineer or Michigan Registered Architect and a minimum of three months of relevant work experience.
2. Bachelor of Science Degree in Engineering, Architecture, or Physical Science and a minimum of six months of relevant work experience.
3. Two years of verified college or technical school and a minimum of one year of relevant work experience.
4. High school or equivalent graduate and a minimum of two years of verified relevant work experience.
5. A minimum of three years of verified relevant work experience.

Minimum Certification Requirements:

1. Current ICC certification as a Reinforced Concrete Special Inspector.
2. Current ICC certification as a Commercial Building Inspector or Residential Building Inspector.
3. Current ACI certification as a Concrete Construction Special Inspector.
4. Current ACI certification as a Concrete Field Testing Technician Grade 1.

D. MASONRY CONSTRUCTION

The Special Inspector shall comply with at least one of the Education and Experience Requirements and at least one of the Certification Requirements noted below:

Minimum Education and Experience Requirements:

1. Michigan Professional Engineer or Michigan Registered Architect and a minimum of three months of relevant work experience.
2. Bachelor of Science Degree in Engineering, Architecture, or Physical Science and a minimum of six months of relevant work experience.
3. Two years of verified college or technical school and a minimum of one year of relevant work experience.
4. High school or equivalent graduate and a minimum of two years of verified relevant work experience.
5. A minimum of three years of verified relevant work experience.

Minimum Certification Requirements:

1. Current ICC certification as a Structural Masonry Special Inspector.

E. STRUCTURAL WOOD CONSTRUCTION

The Special Inspector shall comply with at least one of the Education and Experience Requirements and at least one of the Certification Requirements noted below:

Minimum Education and Experience Requirements:

1. Michigan Professional Engineer or Michigan Registered Architect and a minimum of three months of relevant work experience (see Note 1 below).
2. Bachelor of Science Degree in Engineering, Architecture, or Physical Science and a minimum of six months of relevant work experience.
3. Two years of verified college or technical school and a minimum of one year of relevant work experience.
4. High school or equivalent graduate and a minimum of two years of verified relevant work experience.
5. A minimum of three years of verified relevant work experience.

Minimum Certification Requirements:
1. Current ICC certification as a Commercial Building Inspector.
2. Current ICC certification as a Residential Building Inspector.

F. SOILS

The Special Inspector shall comply with at least one of the Education and Experience Requirements and at least one of the Certification Requirements noted below:

Minimum Education and Experience Requirements:
1. Michigan Professional Engineer or Michigan Registered Architect and a minimum of three months of relevant work experience (see Note 1 below).
2. Bachelor of Science Degree in Engineering, Architecture, or Physical Science and a minimum of six months of relevant work experience.
3. Two years of verified college or technical school and a minimum of one year of relevant work experience.
4. High school or equivalent graduate and a minimum of two years of verified relevant work experience.
5. A minimum of three years of verified relevant work experience.

Minimum Certification Requirements:
1. Current ICC certification as a Soils Special Inspector.
2. Current National Institute for Certification in Engineering Technologies Level II (NICET II) certification (geotechnical or construction or construction material testing or soils).

G. DRIVEN DEEP FOUNDATIONS
H. CAST-IN-PLACE DEEP FOUNDATIONS
I. HELICAL PIERS

The Special Inspector shall comply with at least one of the Education and Experience Requirements and at least one of the Certification Requirements noted below:

Minimum Education and Experience Requirements:
1. Michigan Professional Engineer or Michigan Registered Architect and a minimum of three months of relevant work experience (see Note 1 below).
2. Bachelor of Science Degree in Engineering, Architecture, or Physical Science and a minimum of six months of relevant work experience.
3. Two years of verified college or technical school and a minimum of one year of relevant work experience.
4. High school or equivalent graduate and a minimum of two years of verified relevant work experience.
5. A minimum of three years of verified relevant work experience.

Minimum Certification Requirements:
1. Current NICET II certification (geotechnical or construction or construction material testing or soils).

J. SPRAYED FIRE-RESISTANT MATERIALS (SFRM)
K. MASTIC & INTUMESCENT FIRE-RESISTANT COATING

The Special Inspector shall comply with at least one of the Education and Experience Requirements and at least one of the Certification Requirements noted below:

Minimum Education and Experience Requirements:

1. Michigan Professional Engineer or Michigan Registered Architect and a minimum of three months of relevant work experience.
2. Bachelor of Science Degree in Engineering, Architecture, or Physical Science and a minimum of six months of relevant work experience.
3. Two years of verified college or technical school and a minimum of one year of relevant work experience.
4. High school or equivalent graduate and a minimum of two years of verified relevant work experience.
5. A minimum of three years of verified relevant work experience.

Minimum Certification Requirements:

1. Current ICC Spray-Applied Fireproofing Special Inspector.
2. Current ICC Fire Inspector I.

L. EXTERIOR INSULATION & FINISH SYSTEMS (EIFS)

The Special Inspector shall comply with at least one of the Education and Experience Requirements and at least one of the Certification Requirements noted below:

Minimum Education and Experience Requirements:

1. Michigan Professional Engineer or Michigan Registered Architect and a minimum of three months of relevant work experience.
2. Bachelor of Science Degree in Engineering, Architecture, or Physical Science and a minimum of six months of relevant work experience.
3. Two years of verified college or technical school and a minimum of one year of relevant work experience.
4. High school or equivalent graduate and a minimum of two years of verified relevant work experience.
5. A minimum of three years of verified relevant work experience.

Minimum Certification Requirements:

1. Current Association of Wall and Ceiling Industry (AWCI) EIFS Inspector.
2. Current ICC certification as a Commercial Building Inspector.
3. Current ICC certification as a Residential Building Inspector.

M. FIRE RESISTANT PENETRATIONS & JOINTS

The Special Inspector shall comply with at least one of the Education and Experience Requirements and at least one of the Certification Requirements noted below:

Minimum Education and Experience Requirements:

1. Michigan Professional Engineer or Michigan Registered Architect and a minimum of three months of relevant work experience.
2. Bachelor of Science Degree in Engineering, Architecture, or Physical Science and a minimum of six months of relevant work experience.
3. Two years of verified college or technical school and a minimum of one year of relevant work experience.
4. High school or equivalent graduate and a minimum of two years of verified relevant work experience.
5. A minimum of three years of verified relevant work experience.

Minimum Certification Requirements:
1. Underwriters Laboratories (UL) Firestop Examination.
2. Factory Mutual (FM) Firestop Examination.

N. SMOKE CONTROL SYSTEMS

The Special Inspector shall comply with at least one of the Education and Experience Requirements and at least one of the Certification Requirements noted below:

Minimum Education and Experience Requirements:
1. Michigan Professional Engineer or Michigan Registered Architect and a minimum of three months of relevant work experience (see Note 1 below).
2. Bachelor of Science Degree in Engineering, Architecture, or Physical Science and a minimum of six months of relevant work experience.
3. Two years of verified college or technical school and a minimum of one year of relevant work experience.
4. High school or equivalent graduate and a minimum of two years of verified relevant work experience.
5. A minimum of three years of verified relevant work experience.

Minimum Certification Requirements:
1. Current Associated Air Balance Council (AABC) Technical Certification.

Note:
Special Inspectors for Smoke Control shall also have expertise in Fire Protection Engineering, Mechanical Engineering, and shall be certified as Air Balancers.

O. SPECIAL CASES DETERMINED BY THE BUILDING DEPARTMENT

The Special Inspector shall comply with at least one of the Education and Experience Requirements and at least one of the Certification Requirements noted below:

Minimum Education and Experience Requirements:
1. Michigan Professional Engineer or Michigan Registered Architect and a minimum of three months of relevant work experience (see Note 1 below).
2. Bachelor of Science Degree in Engineering, Architecture, or Physical Science and a minimum of six months of relevant work experience.
3. Two years of verified college or technical school and a minimum of one year of relevant work experience.
4. High school or equivalent graduate and a minimum of two years of verified relevant work experience.
5. A minimum of three years of verified relevant work experience.

Minimum Certification Requirements:
1. Current ICC certification as a Commercial Building Inspector.
2. Current ICC certification as a Residential Building Inspector.

SPECIAL INSPECTOR IN TRAINING

The intent of this provision is to provide practical opportunities for a Special Inspector in Training to gain the needed experience to qualify as a Special Inspector.

An Inspector who does not meet the qualifications for a Special Inspector may be allowed to perform a "Special Inspection" at the discretion of the Special Inspection Agency's Responsible Professional Engineer, provided one or more of the following conditions have been met:

- The individual is working under the direct and continuous supervision of a Special Inspector fully qualified for the type of work involved.
- The individual is working under the indirect and periodic supervision of a Special Inspector, and the scope is minor and/or routine and within the capabilities of the individual.
- The individual is specifically approved by the Building Department. The individual shall be declared in the Statement of Special Inspection and will be given one year to obtain all requirements to qualify as a Special Inspector in the Category of Special Inspection or testing involved.

SPECIAL INSPECTION AGENCY QUALIFICATIONS

The Special Inspection Agency shall comply with at least one of the Requirements noted below:

- An Agency that maintains current International Accreditation Services accreditation with the scope of the accreditation covering the disciplines for which the Agency is designated.
- An Agency that meets the requirements of Section 1703.1 of the Michigan Building Code 2012. The Registered Design Professional and/or Responsible Professional Engineer of the Agency shall provide all documentation necessary for the Building Department to determine if the Agency meets applicable Code requirements.
- An Agency has been accredited by an approved Inspection Agency in accordance with ISO/IEC 17020.

TESTING LAB QUALIFICATIONS

Each designated Testing Lab shall be accredited by at least one of the following accreditation authorities:

- International Accreditation Services accreditation with the scope of accreditation covering the disciplines for which the Testing Lab is designated.
- American Association of State Highway and Transportation Officials (AASHTO) Accreditation Program per either AASHTO R18 or International Organization of Standards/International Electrotechnical Commission (ISO/IEC) 17250.
- American Association of Laboratory Accreditation Program.
- National Voluntary Laboratory Accreditation Program.
- Other Accreditation Authority Program. The Testing lab shall be accredited by a third-party and shall meet the requirements of Section 1703.1 of the 2012 Michigan Building Code.

LABORATORY TECHNICIAN QUALIFICATIONS

Each Laboratory Technician shall have certification in the appropriate Category and one year minimum experience.

NOTES

1. State of Michigan Licensed Engineers and Architects are exempt from the Required Certifications listed for B.4. Structural Cold-Formed Steel, E. Structural Wood, F. Soils, G. Driven Deep Foundations, H. Cast-in-Place Deep Foundations, I. Helical Pile Foundations, N. Smoke Control Systems, and O. Special Cases. The Building Department will require written verification of relevant work experience.
2. Written verification of Experience, Education, and Required Certificates shall be submitted with the Building Permit Application.
3. Some of the Qualification Requirements have been modified from the IAS, AC 291(June 2013) to give local Special Inspection Agencies, Special Inspectors, Testing Labs, Laboratory Technicians, and Fabricator Shops additional time to meet the criteria.
4. The Building Department will consider equivalent criteria for the qualifications of any designated party. The Registered Design Professional shall provide sufficient documentation to substantiate the equivalency request.
5. The Building Department will consider equivalent certifications from a Nationally Recognized Organization obtained by written examination when sufficient documentation to substantiate the request is provided.

BASIS FOR FORMULATING THE CASCADE INSPECTION SERVICES SPECIAL INSPECTION PROGRAM

This program is based on the "*Model Program for Special Inspection"* published by the International Code Council (ICC) and the International Accreditation Services (IAS) and reflects the following:

a. Applicable provisions of Chapter 17 of MBC 2012.
b. Applicable provisions of the following IAS Accreditation Criteria:
    1. AC89 – Accreditation Criteria for Testing Laboratories
    2. AC98 – Accreditation Criteria for Inspection Agencies
    3. AC157 – Accreditation Criteria for Fabrication Inspection Programs for Reinforced Concrete
    4. AC172 – Accreditation Criteria for Fabrication Inspection Programs for Structural Steel
    5. AC196 – Accreditation Criteria for Fabrication Inspection Programs for Wood Wall Panels
    6. AC204 – Accreditation Criteria for Calibration Laboratories
    7. AC291 – Accreditation Criteria for IBC Special Inspection Agencies
    8. AC 370 – Accreditation Criteria for Product Certification Agencies
    9. AC472 – Accreditation Criteria for Inspection Programs for Manufacturers of Metal Building Systems
c. Applicable portions of the following Standards by International Organization for Standardization/International Electrotechnical Commission (ISO/IEC):
    1. ISO/IEC 17011: 2004, Conformity Assessment – General Requirements for Accreditation Bodies Accrediting Conformity Assessment Bodies
    2. ISO/IEC 17020: 2012, Conformity Assessment – Requirements for the Operation of Various Types of Bodies Performing Inspection
    3. ISO/IEC 17024: 2012, Conformity Assessment – General Requirements for Bodies Operating Certification of Persons
    4. ISO/IEC 17025: 2005, General Requirements for the Competence of Testing and Calibration Laboratories
    5. ISO/IEC 17025: 2005/Cor.1:2006, General Requirements for the Competence of Testing and Calibration Laboratories
    6. ISO/IEC Guide 65: General Requirements for Bodies Operating Product Certification Systems