

A photograph of a heavily rusted metal structure, possibly a large container or part of a ship's hull. The metal is dark brown and orange with significant corrosion. The structure is composed of several large, rectangular panels joined together.

# Chubb Construction

Inspection and Verification Record (IVR)

CHUBB®

## **Purpose**

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The purpose of this tool is to arm our Chubb Construction insureds with useful and practical resources and materials that can be used as the client sees fit; either as a “starting point” when creating a Quality Assurance and Control program (QA/QC), as an enhancement to existing QA/QC programs or anywhere in between.

This tool provides the user with a means to organize the quality process, facilitate discussion and communication among construction practices, provide a document with which to track construction processes and finally to provide a means to document completed operations and related installation information and inspections.

## **What is a Construction Defect?**

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A Construction Defect is a flaw or design mistake that reduces the value of the building or structure and/or causes a dangerous condition. Construction defects can be identified during the construction process. However, many are not obvious and are not identified until years later after the building or structure has been completed.

There are many factors that can lead to construction defects such as:

- Improper use of or inferior materials.
- Poor workmanship/construction techniques.
- Improper design of mechanical, HVAC and electrical systems.
- Improper design and engineering analysis of site location, soil conditions, support structures, landscaping and drainage.
- Improper design and installation of building envelope systems like roofing,

weatherproofing, Exterior Insulation and Finishing Systems (EIFS), flashing, veneers etc.

## **What is Quality Assurance?**

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Quality Assurance (QA) is the process established that assures an expected level of quality in the products and services delivered by the contractor.

Quality assurance should include a means for continual improvement of the construction process so that the level of quality continues to increase. This in turn will enhance quality, increase productivity and in the end, deliver a high level of customer satisfaction that can lead to repeat client work and additional customers.

Quality Assurance sets the standards for the enforcement of the Quality Control processes and procedures.

## **What is Quality Control?**

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Quality Control (QC) means the processes and procedures established to monitor operational activities to control the quality of the product or service.

A quality control program must be suited to the characteristics of the organization, considering its size, complexity, activities, culture, exposures, and potential for damage resulting from climate, soil or other inherent conditions.

Contractors should not rely on building code enforcement (controlled inspections) alone to ensure project quality standards are achieved. As with an effective safety program, an effective quality assurance and quality control (QA/QC) plan must have the support of senior management and contain key

elements proven to be part of proactive and successful programs.

## **Elements of a proactive QA/QC program**

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- A written Quality Control and Assurance program should include at a minimum:
- Roles and responsibilities for all employees including management.
- Subcontractor pre-qualification requirements (See Subcontractor Management section above).
- An accountability program (to include all subcontractors) that requires and enforces adherence to established project quality standards, process and procedures.
- Materials selection procedures that take into account design specifications, building code requirements, product performance capabilities & limitations and compatibility of systems.
- Assurance that quality materials are used, installation methods are proper and workmanship is of the highest quality.
- Preconstruction, scheduled and post construction inspections are conducted at each stage of the construction process.
- Accurate documentation of all decisions, assumptions, and recommendations is completed and retained in the project files.
- A formalized records retention program is in place and takes into account the statute of limitation durations for each state in which a project is undertaken.
- Communication policy which provides for clear decisions and constant supervision by experienced individuals.
- Subcontractor prequalification procedures that include a review of their safety record, quality control procedures, EMR, construction defect claims history and experience and manufacturer’ certifications.

- Consultation with Manufactures on installation and application of products and materials and installing them according to specifications.
- Use of independent third party consultants for design review and installation inspections.
- Material storage and inspection procedures (protect materials before installation)
- A Water Intrusion/Mold prevention and remediation program.
- An Owner Training/Turnover Program that educates owner/staff on mechanical systems and equipment operations and locations and provides warranties, maintenance/repair and operating instructions etc.
- A formalized documentation and retention program that includes maintaining bldg documentation, operation inspections, approved change orders, approved design changes, sub-contractor agreements, material purchase agreements and specifications and other issues that pertain to building design and construction. This includes written inspection reports, videos and photographs (including any pre-existing conditions).

### What is Water Intrusion?

Water intrusion is a condition where unwanted water or moisture enters a structure. If gone unnoticed or uncontrolled, it can lead to significant damage to building materials, the structure, carpeting, fixtures, electronic equipment, mold and other damage. These damages can lead to serious construction defect claims made by the building owners and/ or tenants.

There are many reasons why water intrusion can occur such as:

- Faulty design of building envelope allowing excessive moisture to enter.
- Poorly designed plumbing, mechanical, HVAC, drainage and roofing systems.
- Improper application of flashing, caulking, vapor barriers, water proofing, EIFS/Stucco, or other building components.
- Leaking and sweating pipes, balconies, patios, windows, exterior siding, garages, and retaining walls, drain pans, or other areas where there are penetrations in the exterior of the structure.
- Additionally, water intrusion may be more likely to occur in locations where the climate and geography lend itself to excessive moisture.
- The type of building materials used (wood frame versus masonry and steel) and the building materials used can also contribute to the likelihood of water intrusion.

All of these are examples of the many items that need to be considered when assessing the potential for water intrusion.

### Indicators of Water Intrusion

Both during and after the construction process, it is important to know some key indicators that there may be water intrusion problems.

Knowing these, may help to avoid prolonged exposure to excessive moisture reducing the likelihood of damage to the building and property as well as the growth of mold.

Some indicators that a water intrusion problem may exist are:

- Visible formation of water or moisture on exposed surfaces (interior windows, desks, counters, carpets etc.)

- Drippings from pipes, valves, equipment or other surfaces.
- Discoloration or water lines on interior walls, ceiling tiles.
- White lines and patches, chalky substance on basement/ foundation walls.
- Visible mold/fungus or mildew on interior surfaces Damp/musty odors.
- Damp and humid environment even in conditioned spaces.

### What is Mold?

Molds are microbial organisms that produce tiny spores in order to reproduce. The Mold spores are released into the air and travel both indoors and outdoors.

When mold spores come into contact with damp locations, they can begin to grow. Molds can be found almost anywhere; they can grow on virtually any substance, providing moisture is present. For food they will digest whatever it is they are growing on.

There are many types of molds which can grow on wood, paper, carpet, and foods. When excessive moisture or water accumulates indoors, there is the potential for mold growth to occur. This even more so if the water intrusion/ moisture problem is not discovered or remediated in a timely manner.

Since mold spores float through the air and found both in and out of doors, it is impractical to eliminate all molds and mold spores in the environment.

*The most effective way to prevent mold growth is to control water intrusion/moisture.*

## Inspection and Verification Record (IVR)

### How to use this Tool - Overview

The Chubb Construction Inspection and Verification Record Tool (IVR) is designed in such a way where each I.V.R. document pertains to a different major phase/operation of a project (interior, superstructure, mechanical etc..) rather than for a certain type of construction (i.e.. heavy civil, highway, building).

Each section is then separated into subsections that specifically relate to the individual operational aspects that are relevant to that phase/operation.

This allows the user to tailor the tool to their needs by picking and choosing only those sections that apply to that particular

project by using the Yes, No or N/A check boxes.

### How to use this tool - Components

1. The user completed this section to identify project and major construction parties.
2. This column identifies each of the different "Inspection/Test Categories" found in this phase or operation. At the end of each I.V.R. there are blank sections that can be added if additional "Inspection/Test Categories are needed."
3. This section of the report provides the inspection or other detail related to the "Inspection/Test category it is a part of."
4. In this section, the following three

columns (Yes, No or N/A) provide the user with the option to identify each item as being complied with or not or not applicable.

5. The next two columns are used to identify the contractor responsible for the operation and any other sub-tier contractors who may have been hired to perform the work. These columns help to establish responsibility for particular operations.
6. The comments section can be used to note any related concerns, issues or other detail about that specific category.
7. Upon completion of each category, the "responsible" party will initial and date verifying that the information noted in that category was correct.

**CHUBB®** **Electrical Installations**  
Installation and Verification Record

*PLEASE READ CAREFULLY; This sample verification record is being provided to you as a tool that you may wish to use in providing a safety and risk management program. You are responsible for providing safety and risk management services. We at the ACE Companies are providing this tool to you for our own underwriting purposes, and we hereby disclaim any obligation to oversee or monitor the adherence to required or otherwise reasonable safety and risk control practices. We further disclaim liability for claims or suits relating to the alleged or actual failure to conduct reasonable safety control practices, or relating to the use of or failure to use this document.*

*Please note that neither this tool or any of its components contain every possible operation, inspection requirement or other detail that may be relevant to your project or that may be required by federal or state law, or by local building codes, statutes, or other requirements. This tool is intended only as a guideline, and not as a substitute for consultation with your insurance broker, or for engineering, legal or other professional advice.*

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1. Project Identifier: \_\_\_\_\_ CM/GC: \_\_\_\_\_  
 Owner: \_\_\_\_\_ Date: \_\_\_\_\_

Inspection/Test Category	Inspection Criteria			Responsible Party(ies)		Comments/Notes	Inspected by	
	Description	Yes	No	Installation Contractor	Contracted with		Initial	Date
2. Subcontractor Management	3. Prior to start of operations, verify the following are in place at a minimum for each selected subcontractor.							
	Subcontractor pre-qual process that includes at a minimum: review of last 3 yrs Experience Modification Rate (EMR), OSHA violations, losses and financial status.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
	• Signed/executed subcontract agreement.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
	• Contract includes hold harmless and indemnification agreements in your favor (to the extent allowable by law).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
	• Insurance requirements and limits, to include completed operations coverage, meet contract specifications.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
	• Includes primary and non-contributory additional insured status for contractor, its officer/employees, owner and any others required.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
	• Verify valid certificates of insurance and endorsements are in place.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
• An appropriately rated insurance carrier.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
• Signed waiver of subrogation for WC/GL is received.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					

4. 5. 6. 7.

## Inspection and Verification Record (IVR)

8. Upon completion of the entire I.V.R. for a Phase/Operation, the “responsible” party will sign and date the form verifying all information contained is correct. At this point the completed I.V.R. should be filed with project management documents for safe keeping.

insurance company as soon as possible, in accordance with the terms of your insurance policy.

Construction Defect (CD) claims can be especially challenging due to the fact that most CD claims are not identified or reported until well after the project is completed and has been turned over to the owner.

### Claim Reporting

As with any type of claim you may receive, whether it is workers compensation, auto or general liability, in order to achieve the benefits of cost control and effective claims handling, it is always important to properly and promptly report them to your

Because CD claims are generally reported after a project is completed, years down the road in some cases, project documents, plans, names of subcontractors, change orders and inspection documents may become difficult to find.

It is therefore very important that in addition to properly and promptly reporting the claim to your insurance carrier, the following practices should be considered as part of your risk management process:

- A formalized QA/QC program in place for all projects.
- A formalized document recording and retention system in place so project documents can be located easily if a claim arises.
- A formalized Accident Investigation program in place that thoroughly investigates all claims w/findings communicated to prevent reoccurrence.

Inspection/Test Category	Inspection Criteria			Responsible Party(ies)		Comments/Notes	Inspected by		
	Description	Yes	No	N/A	Installation Contractor		Contracted with	Initial	Date
<b>Manufacturer Information</b>	Verify manufacturer and building information is delivered to the owner in writing. These items include but are not limited to:								
	▪ Construction documents such as drawings, specifications and blueprints.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
	▪ Warranty information.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
	▪ Safety instructions to include lockout/tagout requirements.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
	▪ Start up and operation instructions and procedures.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
	▪ Maintenance and service instructions.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
	▪ Installation design plans.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
	▪ Training for owners, maintenance staff, etc.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
	▪ Any training products and resources.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
	▪ Location of utilities and structures.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
	▪ Identification/labeling of controls, piping or other.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
	▪ Location/labeling of circuit panels, switches.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
▪ Location/labeling of controls, switchgears.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>						
▪ All punch list items and inspection report deficiencies addressed and corrected to the satisfaction of the inspection agency and/or manufacturer?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>						
<b>ADD</b>	▪	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
<b>ADD</b>	▪	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					

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**VERIFICATION STATEMENT**

I verify that to the best of my knowledge, the inspections and/or tests set out in this installation and verification record were completed by the responsible party shown, that any recommended corrections were made, and that any reports accompanying these inspections/tests were received for review, file and sign off and (if required) PE/RE stamps

Name (please print in full) \_\_\_\_\_

Initials \_\_\_\_\_ Date \_\_\_\_\_

## Inspection and Verification Record (IVR)

- Construction Defect awareness training for all supervisors and employees.
- Claim reporting procedures for field personnel are established and communicated.

### **References and Acknowledgments**

1. New York City, Department of Buildings, [http://www.nyc.gov/html/dob/html/forms/forms\\_technical.shtml](http://www.nyc.gov/html/dob/html/forms/forms_technical.shtml)
2. Building Code of the City of New York, originally published October 1, 2003, revised through October 1, 2004
3. The New York City Construction Code
4. The New York City Mechanical Code
5. The New York City Plumbing Code





### For more information

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For more information regarding  
Construction Defect Liability:

- Contact your Chubb/ESIS Risk Engineer
- Contact your Chubb Construction Underwriter
- Ask for a copy of the:
  - Chubb Construction Defect Exposure Guide

## Chubb. Insured.<sup>SM</sup>

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