EVERDRY WATERPROOFING

Rust and Metallic Corrosion in Your Basement

DO YOU HAVE RUST OR METALLIC CORROSION IN YOUR BASEMENT?

Do you have steel beams or support columns in your basement? Is your water heater, furnace, washer or dryer in the basement? If your answer to any of these questions is "yes", you should be concerned about rust and corrosion and their effect on things in your basement. While rusting might not seem like a major issue, rust and metallic corrosion compromise the steel and metals in your basement, potentially creating a safety hazard in more ways than just the obvious.

Steel Beams and Structural Components

Structural steel is quite strong and durable. This is one of the main reasons it is used for construction. However, even structural steel is susceptible to rust and corrosion. This corrosion (or rusting) compromises the integrity of the steel, thus creating a potential safety hazard to the occupants of the building. Preventing the corrosion of steel beams and structural components (i.e. steel support posts) is therefore vital to your home's safety.

Other Areas of Concern in the Basement

But what about the other things in your basement that are made of metal ? Brown, red or orange substances on any of the following can also be signs of a potential problem or safety hazard:

- utility wires
- fuse or breaker boxes
- fuses or circuit breakers
- furnaces
- washers
- dryers
- water heaters
- oil or water well tanks
- metal tools
- fasteners holding structural or building components together
- metal stair supports

Rust and Corrosion - What Is It?

So, just what is rust and corrosion in the basement anyway? The "technical" definition reads like the following[1]:

Rust {ruhst]

1. *Also called **iron rust** . the red or orange coating that forms on the surface of iron when exposed to air and moisture, consisting chiefly of ferric hydroxide and ferric oxide formed by oxidation.*
2. *any film or coating on metal caused by oxidation.*

Rust and corrosion occur when metals, such as iron or steel come in contact with air and moisture. An electrochemical reaction takes place when all three are present, which results in the crusty or flaky coating (hydrated oxide) we see on the surface as rust or corrosion. Rust will not form in dry air; it occurs only when there is moisture or water present. Once rust or corrosion begin, they continue to corrode the metal. Ignored over time, this condition can lead to degradation of the material, resulting in loss of strength or stability and potentially even failure.

You are likely to experience rust or corrosion as a result of exposure to air and moisture if:

- Moisture or water is present in the basement
- The metal is uncoated
- The coating on the metal is not well maintained
- The foundation is not adequately insulated (causing condensation)
- The foundation is not adequately ventilated (potential for water vapor)
- There are leaks in the roof or gutter/downspout systems
- There are plumbing leaks
- If there is poor design or issues with the construction of the building's foundation

Ways to Prevent Rust and Corrosion in the Basement

To prevent basement rust and corrosion, you need to comprehensively deal with any moisture problems in this space. When oxygen and water react, the corrosive effect on iron and metal materials is inevitable. Below is a simple guide to help deal with this problem comprehensively:

1. Identify the moisture source. Often it is water seeping in through wall cracks or the floor. It could also be as a result of hydrostatic pressure or window well overflow. It is important to have a professional inspect your basement who will carry out diagnostic tests to identify the source of water.
2. Once the problem has been identified, an appropriate waterproofing technique should be deployed. Be certain to eliminate all four ways water can enter your basement. Eliminating only one or two is just a "band aid" which will cost you more money later. The idea is to ensure that no water, moisture or water vapor enters the basement space.
3. Keep the temperature in your basement constant and between 68- and 72-degrees F with fluctuations of less than 1-1/2 degrees. This helps to prevent condensation. In addition, utility pipes and tanks can be insulated to avoid condensation. There are different materials used for this purpose and this also ensures longer life of these fixtures.

4. Provide a clean, circulating source of air. This helps to control humidity and dust, which eventually leads to corrosion.

[1] Source www.dictionary.com