

## **IMPORTED DRYWALL<sup>1</sup>**

Consumers from at least 13 States and the District of Columbia have reported health symptoms or certain metal corrosion problems in their homes that may be related to drywall imported from China.

The Consumer Product Safety Commission (CPSC), together with the Environmental Protection Agency (EPA) and the Department of Health and Human Services (HHS), is moving aggressively to use all available resources and expertise to fully investigate this serious matter and find solutions. We are also working with State and local authorities to coordinate our response and talking with the Chinese government.

We are committed to providing answers to consumers as quickly as possible.

### **WHAT WE KNOW / WHAT WE ARE DOING**

#### **Consumer Reports**

To date, the CPSC has received over 180 reports from residents in 13 States and the District of Columbia who believe their health symptoms or the corrosion of certain metal components in their homes are related to the presence of drywall produced in China. State and local authorities have also received similar reports. We received our first incident report from a consumer on December 22, 2008.

The majority of the reports to the CPSC have come from consumers residing in the State of Florida while others have come from consumers in Louisiana, Virginia, Wisconsin, Ohio, Alabama, Mississippi, Missouri, California, Washington, Wyoming, the District of Columbia, Arizona, and Tennessee. Consumers largely report that their homes were built in 2006 to 2007, when an unprecedented increase in new construction occurred in part due to the hurricanes of 2004 and 2005.

Common features of the reports submitted to the CPSC from homes believed to contain problem drywall have been:

- Consumers have reported a “rotten egg” smell within their homes.
- Consumers have reported health concerns such as irritated and itchy eyes and skin, difficulty in breathing, persistent cough, bloody noses, runny noses, recurrent headaches, sinus infection, and asthma attacks.
- Consumers have reported blackened and corroded metal components in their homes and the frequent replacement of components in air conditioning units.

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<sup>1</sup> This document was prepared by CPSC staff, has not been reviewed or approved by, and may not necessarily reflect the views of, the Commission.

## **The Investigation**

Our investigation is proceeding simultaneously on three tracks: (1) evaluation of the relationship between the drywall and the reported health symptoms; (2) evaluation of the relationship between the drywall and electrical and fire safety issues in the home; and (3) the tracing of the origin and distribution of the drywall.

This investigation includes field work focusing on a number of issues. The staff is contacting some consumers to discuss their particular drywall issues and exploring their experiences in more detail. Some of these inquiries will be in person and some will be by telephone. We have field investigators permanently stationed in the affected States (with the exception of Wyoming) and we are shifting additional staff to those areas to assist in the investigation. Staff members are collecting samples of various drywall and degraded electrical components, and working to identify the links from foreign manufacturers to the U.S. consumers. One challenge has been figuring out how much problem drywall there is in any house, given that it is already installed, likely painted and may not be clearly marked. The drywall could fill the home or be just a few sheets.

The following offers some more detailed specifics about the health and engineering investigations to date.

## **Health Investigation**

The most frequently reported symptoms are irritated and itchy eyes and skin, difficulty in breathing, persistent cough, bloody noses, runny noses, recurrent headaches, sinus infection, and asthma attacks. Since many consumers report that their symptoms lessen or go away when they are away from their home, but return upon re-entry, it appears that these symptoms are short-term and related to something within the home. Some of these symptoms are similar to colds, allergies or reactions to other pollutants sometimes found in homes. As such, it is important to carefully determine if the reported symptoms are related to the drywall and not any other environmental factors or pollutants in the home.

We are aggressively investigating whether scientific evidence exists linking chemical emissions from the drywall to the reported health complaints. At this time, however, any such relationship or long-term health effects are unknown.

We are undertaking a multi-tracked testing approach to assess the impact on human health. The data collected will form the basis for a health risk assessment.

- **In-home air sampling (field) studies** - Continuous, real-time measurements of the sulfur, acid and other gases, including the presence of freon byproducts. Measurements will take into account humid conditions as well as various times of day. Testing will be done over longer time periods because many symptoms have been reported to occur after hours of sleeping.

- **Laboratory elemental characterization studies of domestic and imported drywall** - Characterization of components of drywall and identification of any differences.
- **Laboratory chamber studies of domestic and imported drywall** - Chamber studies to separate and isolate chemical emissions from drywall as opposed to chemicals emitted from other home products (e.g., carpets, cleaners, paint, adhesives, beauty products).

### **Electrical and Fire Safety Investigation**

Consumers have reported blackened and corroded metal in their homes. Particularly, consumers have reported failures of certain components such as: (1) premature failures of central air conditioning evaporator coils located indoors as part of the central air conditioning unit air handler; and (2) intermittent operation or failure of appliances, such as refrigerators and dishwashers, and electronic devices such as televisions and video game systems.

To date, CPSC has not received any reports of fire, electric shock or fire pre-cursor incidents (such as discolored, overheated/burned out, or smoking components) related to problem drywall.

Visual examination of electrical wiring within affected homes by CPSC staff showed varying levels of corrosion on the exposed portions of copper wires, in particular ground wires, since they are not insulated. The presence and extent of corrosion within a house, or even within a room, however, appeared inconsistent.

We are investigating the electrical and fire safety issues in the home, including the corrosion of components such as fuel gas piping and fire safety devices, and any immediate or long-term fire and safety concerns. Particular areas of focus for this investigation include:

- **Electrical components** including residential wiring, receptacles, switches, circuit breakers, panel boards, ground fault circuit interrupters (GFCIs), and arc fault circuit interrupters (AFCIs).

Possible concerns with electrical components include:

- Deterioration of connections such as where a wire is connected to a receptacle or where a circuit breaker is installed in a panel board. A degraded connection could develop hot spots resulting in overheating and possibly fire.
- Erosion of copper conductors over time, reducing conductor cross-sectional area and compromising its physical integrity. If the corrosion is progressively eating away at a wire, the wire would eventually lose its capacity to carry current and start to overheat or become physically weak and break.

- Damage to circuit traces or electronic components on printed circuit boards causing failure of protective devices like GFCIs, arc-fault circuit interrupters, and smoke alarms, which can present shock and fire hazards from the loss of protection provided by these devices.
- **Gas service components** including flexible connectors and copper piping. The concern is that potential gas leakage due to corrosive pitting of piping could present a fire or explosion hazard.
- **Fire safety components** including smoke alarms and fire sprinklers. For smoke alarms, potential concerns include damage to electronic circuitry and degradation of the sensor. Either condition could result in an inoperable smoke alarm. For fire sprinklers that use metallic fusible elements, potential concerns are that corrosion may adversely affect activation temperatures. Failures of these devices can put consumers at risk.

The investigation into electrical and fire safety issues is a two-part engineering component test program: (1) metallurgical analysis of various components collected from affected residences to characterize the type and extent of any damage; and (2) exposure of new components to elevated levels of gases, identified in the drywall chamber studies, as part of an accelerated corrosion test program to determine long-term exposure safety implications. A metallurgical analysis of the accelerated corrosion will enable comparison with the actual collected samples from homes.

## **FREQUENTLY ASKED QUESTIONS**

1. **Q: How can I tell if my home has problem drywall?**

A: We are currently not aware of any definitive test to determine if a home has problem drywall. Nevertheless, you might consider contacting your homebuilder to ask about the materials used in construction.

Consumers raising concerns about drywall have typically identified a “rotten egg” smell within their house, several health symptoms while in the home, and corrosion or blackening of certain metal items. Consumers have also reported frequent failures of copper piping in air conditioning units.

2. **Q: What should I do if I think my house has problem drywall?**

A: We recommend four steps:

1. The most important issue is your health and safety. If you are suffering from the health symptoms described as common to the reports of exposure to problem drywall, please consult your physician as soon as possible. If you experience any of the electrical or fire safety concerns described as

common to the reports of exposure to problem drywall, please consult your local gas or electric supplier and a licensed electrician or building inspector as soon as possible.

2. You should contact your State and local authorities to report your concerns and get direction on any help or resources in your area.
3. You should also report your concerns to us using the form at <https://www.cpsc.gov/cgibin/incident.aspx>
4. You should also consider contacting your insurance company and homebuilder to report your concerns.

3. **Q: What are the health symptoms and risks?**

A: The most frequently reported symptoms are irritated and itchy eyes and skin, difficulty in breathing, persistent cough, bloody noses, runny noses, recurrent headaches, sinus infection, and asthma attacks. Since many consumers report that their symptoms lessen or go away when they are away from their home, but return upon re-entry, it appears that these symptoms are short-term and related to something within the home.

We are aggressively investigating if scientific evidence exists linking chemical emissions from the drywall to the reported health complaints. At this time, however, any such relationship or long-term health effects are unknown.

4. **Q: What should I do if I have any of the symptoms described as common to exposure to problem drywall?**

A: Please consult your physician as soon as possible.

5. **Q: Should I hire an air quality tester or a firm to remove and replace the drywall?**

A: We cannot advise whether or not to take such steps. We are still investigating the problem.

Please be cautious, however, of persons or businesses advertising testing and remediation services – there may be unqualified or dishonest individuals seeking to take advantage of consumers struggling to address this issue. You should consult your State and local authorities if you have any questions or concerns about contractors or testing companies promising solutions to these drywall matters.

6. **Q: What are the electrical or fire safety concerns and what I should I watch for in my house?**

A: Consumers have reported blackened and corroded metal in their homes. Particularly, consumers have reported failures of certain components such as: (1) premature failures of central air conditioning evaporator coils located indoors as part of the central air conditioning unit air handler; and (2) intermittent operation or failure of appliances, such as refrigerators and dishwashers, and electronic devices such as televisions and video game systems.

Please see the FAQ below if you have questions about gas service.

You should generally watch for the following potential electrical hazards in your home:

Power outages – a circuit breaker which needs resetting frequently without any apparent cause; especially if a ground-fault circuit interrupter (GFCI) or arc fault circuit interrupter (AFCI) trips frequently. Arc-fault circuit interrupters are a special kind of circuit breaker that is designed to detect arcing conditions in the electrical wiring.

Dim/flickering lights – lights dim often without any specific cause, such as the air conditioner or the refrigerator turning on.

Arcs/sparks – bright flashes or showers of sparks anywhere in your electrical system.

Sizzles/buzzes – unusual sounds from electrical system devices.

Overheating – parts of your electrical system, such as switch plates, dimmer switches, receptacle outlet covers, cords and plugs may be warm as a normal consequence of their operation but should not be discolored from heat or painful to touch.

Odors – pungent smells such as strong fumes from overheating plastic or electrical insulation materials.

Electrical shocks – any shock, even a mild tingle.

Multiple symptoms would be a stronger indication of problems.

7. **Q: What should I do if I suspect the corrosion has affected my gas service?**

A. If you suspect corrosion has affected your gas service, please consult your gas supplier immediately.

**However, if you suspect a gas leak in or outside your home:**

- LEAVE the area IMMEDIATELY and tell others to leave too.
- DO NOT turn any lights on or off, smoke, or operate any vehicle or equipment that could cause sparks.
- DO NOT attempt to turn gas valves on or off.
- Immediately call your gas supplier from a neighbor's phone. Follow the gas supplier's instructions.
- If you cannot reach your gas supplier, call the fire department.
- Installation and service must be performed by a qualified installer, service agency or the gas supplier.

8. **Q: What should I do if I experience any of the electrical or fire safety concerns common to exposure to problem drywall?**

A: Please consult your local gas or electric supplier and a licensed electrician or building inspector, as soon as possible.

Please see the FAQ above if you have questions about gas service.

9. **Q: Can you visit my home to test the air and to tell me if I have a problem with my drywall?**

A: During our investigation, a number of homes will be visited to conduct tests and gather samples, but we cannot visit every potential house and conduct a screening.

10. **Q: What builders used the drywall in question?**

A: We are still investigating the scope of the drywall problem. We are working to identify the links from foreign manufacturers to the U.S. consumers in consultation with the Chinese government and the U.S. Customs and Border Protection.

11. **Q: Why doesn't the CPSC just recall the drywall?**

A: CPSC cannot order someone to conduct a recall without a trial. Our case on behalf of consumers will have to be driven by scientific proof linking the

drywall and the health problems or the electrical and fire safety issues, which we are aggressively pursuing.

12. **Q: Why didn't the CPSC catch this problem drywall before it was installed in homes?**

A: CPSC does not have the legal authority to perform pre-market testing and approval of products. In addition, this is a unique situation given that drywall has not presented problems such as these in the past.

13. **Q: What has been the response of the Chinese government?**

A: CPSC is in contact with the Chinese government, which is cooperating with our investigation. The Chinese authorities have offered to arrange for a Chinese official to travel to the United States in support of our investigation.

14. **Q: When will we know the results of the investigation?**

A: Although we have urgently committed significant resources to this problem, gathering evidence and conducting the necessary tests will take time. It could be months before we can confidently address the scientific relationships between the problem drywall and the health and safety concerns raised by consumers.

Be assured that, as our investigation progresses, we are committed to updating consumers regularly with as much information as possible.

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