



441 G St. N.W.
Washington, DC 20548

July 31, 2013

Congressional Requesters

Subject: Information on Defective Drywall

Rebuilding of damaged homes following multiple hurricanes that struck the southeast and Gulf Coast regions of the United States from 2004 through 2008, combined with new home construction, led to a shortage of American-made gypsum wallboard—better known as drywall.¹ To satisfy demand, some companies involved with construction began importing drywall from foreign manufacturers. In 2008, the Consumer Product Safety Commission (CPSC) was informed of high levels of hydrogen sulfide emissions (referred to as “offgassing”) in certain drywall imported from China.² CPSC performed testing and found the level of hydrogen sulfide emissions in several brands of drywall manufactured in China to be 100 times that of drywall that was manufactured in other countries. For the purposes of this report, we refer to drywall with these high levels of hydrogen sulfide emissions as defective drywall.³ Home owners have expressed concerns about property damage, including corrosion of copper pipes and electrical wiring, failure of air conditioning equipment, damage to light fixtures and electronic equipment, and some have complained of a “rotten egg” smell in their homes as a result of this drywall. Some home owners have also reported potential health concerns such as headaches, respiratory problems, and nosebleeds.

Some home owners impacted by the use of this defective drywall filed insurance claims through their home owners’ insurance policies.⁴ However, the extent to which coverage for conditions such as defective drywall is available through such policies is the subject of litigation in multiple states. Additionally, some home owners sued foreign manufacturers and other companies responsible for the distribution or installation of the defective drywall.⁵ Settlements from litigation

¹Hurricanes during this time period included Ivan, Katrina, and Rita.

²Hydrogen sulfide is a flammable, colorless gas with a characteristic odor of rotten eggs.

³See GAO, *Consumer Product Safety Commission: Agency Faces Challenges in Responding to New Product Risks*, [GAO-13-150](#) (Washington, D.C.: Dec. 20, 2012). The use of the term “defective drywall” throughout this report is intended to reflect the term as commonly used by the public and many stakeholders involved in this issue. The use of this term does not, however, constitute a GAO, CPSC, or other government agency finding of a product defect, safety hazard, substantial product hazard, an unreasonable risk of serious injury or death, a hazardous substance as defined under applicable federal statutes or any other similar legal authority, regulation, or other proceeding.

⁴Home owners’ insurance is a package insurance policy providing property and liability coverage tailored to the needs of most home owners, condominium owners, and apartment tenants. We have ongoing work looking at the perils covered by standard home owners’ insurance policies.

⁵Enforcing product safety standards on foreign manufacturers through an adjudicative proceeding could theoretically pose practical challenges. For example, one important prerequisite to maintaining an action against any defendant in a U.S. state, federal, or administrative court is that the court must have the ability to exert personal jurisdiction over that party. A court’s exercise of personal jurisdiction over a party must satisfy the fundamental notions of fairness mandated by the Due Process Clause of the Fifth or Fourteenth Amendments. In the case of a defendant physically located outside the territorial jurisdiction, such as a foreign manufacturer, personal jurisdiction can be established if sufficient contacts exist between a defendant and the territorial jurisdiction where the court sits, and the defendant receives fair notice of the suit. Both requirements are fact-specific and must ultimately be decided by a court, if challenged by the defendant. See GAO, *Consumer Safety: Better Information and Planning Would Strengthen CPSC’s Oversight of Imported Products*, [GAO-09-803](#) (Washington, D.C.: Aug. 14, 2009).

against parties other than the home owner's insurance companies are in progress, and these settlements, which are partly funded by commercial general liability (CGL) insurance policies held by those companies, could provide compensation to assist affected home owners with the removal and replacement of defective drywall—also referred to as remediation.⁶

You asked us to review alternative methods of providing relief from damage associated with defective drywall. This report describes (1) what is known about reimbursements home owners have received from insurance companies for damage from the use of defective drywall and (2) what other efforts have been undertaken to help address home owners' damage associated with defective drywall. To describe what is known about reimbursements home owners have received from insurance companies, we interviewed officials from select federal and state agencies with responsibilities related to monitoring insurance or who were involved with the response to defective drywall. Federal agencies included CPSC, the Department of Housing and Urban Development (HUD), the Federal Housing and Finance Administration, and the Federal Insurance Office. We interviewed state agencies from the most affected states—Alabama, Florida, Louisiana, Mississippi, and Virginia. In addition, we interviewed select industry associations, and home owner and commercial general liability insurers with the majority of the market share for these insurance lines in 2009—the peak of reports related to defective drywall. Further, we reviewed settlement information from the ongoing multidistrict litigation related to defective drywall. To describe other efforts that have been undertaken to address home owners' damage associated with defective drywall we interviewed select federal and state agencies, industry associations, and home owner and commercial general liability insurers, and we reviewed federal and state legislation and proposed legislation.⁷ Finally, we obtained technical comments from CPSC on a draft of key statements included in this letter, which have been incorporated as appropriate.

We conducted this performance audit from January 2013 to July 2013 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

Results in Brief

We found that damage from defective drywall has been addressed primarily through legal settlements partly paid by CGL reimbursements. Three of the four insurers with whom we spoke contributed to legal settlements by paying for CGL claims stemming from lawsuits against their policyholders, and one of these insurers also made payments for CGL claims separate from legal settlements. The legal settlements from defective drywall lawsuits involve hundreds of companies in the drywall supply chain (including importers, suppliers, and builders), and most of the lawsuits have been consolidated under multidistrict litigation in the United States District Court for the Eastern District of Louisiana. One of the legal settlements involves one of the two primary manufacturers of defective drywall and provides an uncapped amount of funds to address damage to affected homes, as well as \$30 million for other expenses. This

⁶Commercial general liability insurance is a standard insurance policy issued to business organizations to protect them against liability claims for bodily injury and property damage arising out of premises, operations, products, and completed operations, as well as advertising and personal injury liability.

⁷We may not have identified all efforts that could assist affected home owners.

manufacturer's settlement is part of a group of settlements that guarantees more than \$350 million to assist affected home owners, and that amount could increase.

Federal, state, and local governments have made a number of efforts to assist home owners who have experienced damage related to defective drywall. Federal efforts include, for example, an Internal Revenue Service (IRS) casualty loss deduction and mortgage forbearance. State and local efforts include, for example, reduced property tax assessments and legislation related to defective drywall, such as legislation prohibiting its use or sale. However, the extent to which home owners may have accessed or benefited from this assistance is unknown as data have not been collected to determine whether home owners sought assistance specifically because of defective drywall.

Background

According to CPSC data, from 2008 through 2013, CPSC received over 4,000 reports with complaints of defective drywall. These reports peaked between 2009 and 2010 and then steadily decreased over the last 3 years. In all, CPSC received reports of defective drywall from 44 states and the District of Columbia, with the majority (86 percent) of the reports received from consumers in the Gulf Coast states, including Florida, Louisiana, Mississippi, and Alabama.⁸ The actual number of affected homes is unknown but is likely greater than the number of reports for a variety of reasons. For example, CPSC officials explained that consumers may not report that their homes have defective drywall due to concerns regarding reduced property values and potential loss of insurance coverage. CPSC officials also noted that the number of reports received is greater than the number of consumers reporting defective drywall because some consumers made multiple reports. In response to complaints of defective drywall, the Federal Interagency Task Force on Problem Drywall was created in 2009. It included the Centers for Disease Control and Prevention, the Department of Homeland Security, HUD, and the Environmental Protection Agency, with CPSC serving as the lead agency to study the problem and issue guidance for identification and remediation of defective drywall. See the enclosure for a more detailed discussion of data on drywall reports and imports and estimates of the number of homes affected, as well as a timeline of selected related events.

Numerous Claims Have Been Addressed through Legal Settlements Partly Paid by Commercial Insurance Reimbursements

Four insurers with whom we spoke received a total of approximately 2,000 CGL claims related to defective drywall. Three of these insurers have agreed to contribute to broader settlements on behalf of their CGL policyholders to address damage from defective drywall related to such claims. The settlements also involve a manufacturer and hundreds of companies in the drywall supply chain (including importers, suppliers, and builders), and provide funds for home owners with defective drywall.⁹ Other than lawsuits filed against home owners' insurance companies, most of the lawsuits involving defective drywall have been consolidated under multidistrict litigation in the United States District Court for the

⁸CPSC also received reports from American Samoa and Puerto Rico.

⁹Whether a home owner with defective drywall will receive funds from a particular settlement and the amount a home owner will receive depend on which Chinese company manufactured the drywall installed in the home owner's property and what other companies were in the supply chain involving the home owner's property, including suppliers, distributors, installers, and developers.

Eastern District of Louisiana.¹⁰ One of the settlements from the multidistrict litigation involves one of the two primary manufacturers of defective drywall, whose settlement agrees to provide funds for remediation and certain other expenses for home owners with that manufacturer's drywall. As part of the settlement, the manufacturer created two funds to address home owners' damage. One of the funds provides an uncapped amount for the purpose of remediation, and the other fund provides \$30 million for other expenses. This manufacturer's settlement is part of a group of settlements that guarantees more than \$350 million to assist affected home owners, and that amount could increase.¹¹ Each settlement provides redress for affected parties who fit within the parameters defined in the settlement agreement. For example, the manufacturer's settlement provides redress for affected parties who, as of December 9, 2011, filed a lawsuit related to defective drywall. Home owners who did not apply by the December 2011 deadline are not included in that settlement's population.

The other settlements in the group provide about \$70 million from more than 700 builders, suppliers, and installers, and about \$53 million, \$8 million, and \$7 per square foot, from three different major suppliers for affected home owners with lawsuits against the companies.¹² As of July 15, 2013, remediation associated with these settlements had been completed on 1,529 homes, begun on 197 homes, and was set to begin on 97 more homes, according to court documents. Another group of settlements includes multiple companies and addresses drywall-related damage of home owners in Virginia. The settlements and allocation plans were finalized in early July, and the total value of the settlements is more than \$17 million. The District Court for the Eastern District of Louisiana will continue to oversee ongoing advances in the defective drywall cases including potential future settlements.

Three stakeholders with whom we spoke indicated that CGL policies can provide varying degrees of coverage for defective products. For example, two of the four insurers with whom we spoke mentioned that their CGL policies could provide different maximum amounts of coverage. Another stakeholder said that a developer recovered most of its business losses from defective drywall through an all-inclusive CGL policy that provided comprehensive coverage for the developer's losses. One of the four insurers with whom we spoke also made payments for CGL claims separate from legal settlements. In contrast, several stakeholders with whom we spoke indicated that home owners' insurance does not generally cover defective products, but two of these stakeholders noted that home owners' insurance may cover related damage, such as corrosion of wires.

¹⁰Because of the commonality of facts in the federal lawsuits all federal actions alleging damages from some defective drywall manufactured in China were transferred to the United States District Court for the Eastern District of Louisiana for coordinated and consolidated proceedings. The multidistrict litigation consists of over 50 cases currently pending before the federal court in the multidistrict litigation. A number of other cases have also been filed in several state courts. In both the federal and state cases the plaintiffs have filed suit alleging certain actual and potential damage or risks associated with drywall manufactured by select companies in China. The defendants in the cases manufactured, distributed, or installed the defective drywall. Subsequent cases filed in any federal court will ordinarily be transferred to this district court to become part of this litigation.

¹¹Damage from the other primary manufacturer's drywall may be at least partially addressed through the settlements made by supply chain companies involved in this group of settlements. However, the funding is limited to the amounts specified in the settlements and allocations whether or not that amount is sufficient to address all the damage from the manufacturer's defective drywall.

¹²The individual settlements involving the builders, suppliers, and installers from these supply chain entities do not include claims from affected Virginia home owners because of the lack of available insurance funds due to the interpretation of policies related to defective drywall within Virginia law. Also, most of the drywall imported into Virginia came from the other primary defective drywall manufacturer and therefore is unrelated to this manufacturer's settlement.

Federal, State, and Local Governments Have Made Efforts to Assist Affected Home Owners

Federal Government

In addition to the Federal Interagency Taskforce on Problem Drywall, the federal government made a number of efforts to assist affected home owners, including the following:

- *Legislation.* Congress has passed legislation related to defective drywall. For example, Congress passed the Drywall Safety Act of 2012, which includes requiring drywall to be labeled with the manufacturer's name and the month and year of manufacture, and standards to be set that limit the sulfur content.¹³ Congress also passed the Dodd-Frank Wall Street Reform and Consumer Protection Act in July 2010, which contained a provision requiring HUD to study the effect of drywall imported from China from 2004 through 2007 on residential mortgage loan foreclosures.¹⁴ HUD's 2011 study found that defective drywall was not a significant contributor to the foreclosure crisis.¹⁵ In addition, we identified 17 other bills related to defective drywall that were introduced in Congress since 2009 but were not enacted. For example, one bill prohibited an insurer from cancelling or declining to renew any home owners' insurance policies based on the presence of certain types of drywall.¹⁶
- *Community Development Block Grant (CDBG) Program.* In 2009, HUD announced that its existing CDBG program could be a resource to help states and local communities with defective drywall rehabilitation expenses.¹⁷ HUD highlighted a few CDBG activities that could help address defective drywall damage—for example, real property acquisition and relocation of individuals and families—but the activity must meet one of the program's national objectives.¹⁸ In addition, for CDBG funds to be used by states or communities, an action plan must be created and submitted for HUD approval each year. The plan identifies community needs, resources, and priorities and describes the projects to be undertaken with CDBG funds in the upcoming year. A HUD official told us he knew of no states or local communities that used CDBG funds to address damage from defective drywall. He said that some states and communities considered using this option but may have chosen not to because the cost to remediate affected homes was high and therefore the funds would only have assisted a limited number of home owners. Officials from one state told us that they had explored this option but were unable to use

¹³Drywall Safety Act of 2012, Pub. L. No. 112-266, 126 Stat. 2437 (2013). The act also requires CPSC to revise its remediation guidance to state that defective drywall that is removed from homes should not be reused or used in new drywall production.

¹⁴Dodd-Frank Wall Street Reform and Consumer Protection Act, Pub. L. No. 111-203, § 1494, 124 Stat. 1376, 2207 (2010).

¹⁵HUD, *Study of the Possible Effect of Problem Drywall Presence on Foreclosures, Report to Congress*, (Washington, D.C.: Fall 2011).

¹⁶No new bills have been introduced in the 113th Congress as of July 15, 2013, and all of the prior 17 bills were proposed in prior Congresses and are considered dead unless reintroduced as a new bill.

¹⁷The CDBG program provides federal funding for housing, economic development, neighborhood revitalization, and other community development activities.

¹⁸CDBG's objectives are to (1) provide benefit to low- and moderate-income persons, (2) eliminate slums or blighted conditions, or (3) address an immediate threat to the health or welfare of the community.

CDBG funds because some of the affected areas were considered entitlement communities, which are subject to different program rules.¹⁹

- *IRS Casualty Loss Deduction.* In 2010, IRS provided guidance to home owners concerning a casualty loss deduction for property losses resulting from defective drywall.²⁰ The casualty loss deduction reduces the affected home owners' federal income tax burden.²¹ A home owner may deduct a casualty loss in the year that payments are made to repair damage of their personal residence and restore it to the condition that existed immediately prior to the damage. Based on our analysis, the data that the IRS collects do not distinguish whether this type of assistance has been used specifically for defective drywall.
- *Mortgage Forbearance.* Some affected home owners may qualify for forbearance on their mortgage from Freddie Mac, Fannie Mae, or the Federal Housing Administration.²² These three entities requested that their servicers offer forbearance to allow home owners affected by defective drywall to remediate their homes. For example, Freddie Mac servicers can offer forbearance by suspending a borrower's mortgage payments for up to 3 months or by reducing payments for up to 6 months to help borrowers bear unexpected costs of remediating defective drywall. The data these three entities collect do not distinguish whether forbearance has been used specifically for defective drywall. Therefore, we could not determine how many home owners used this assistance.

State and Local Governments

State and local governments have made the following efforts to assist affected home owners:

- *Legislation.* Three of the five states we spoke with had passed some legislation related to defective drywall. For example, Louisiana passed legislation that prohibited insurers from cancelling affected home owners' insurance policies as a result of defective drywall, though this legislation automatically terminated on July 1, 2013. Louisiana passed other legislation that allowed the use of \$5 million of CDBG disaster recovery funds (which differ from the nondisaster CDBG program previously discussed) to create a program

¹⁹Entitlement communities are metropolitan cities and urban counties.

²⁰Property losses include amounts paid to repair damage to a personal residence or household appliances.

²¹Generally, the casualty loss can be deducted if the home owner is itemizing deductions, which are subtracted from adjusted gross income in determining taxable income. This casualty loss is reported on Form 4684, Casualties and Thefts, and is then included into one line item within Schedule A, Itemized Deductions, which are both attached to the tax return. If the home owner has a pending claim for reimbursement through property insurance, litigation, or otherwise, the amount of the claim is limited to 75 percent of the amounts paid to repair damage.

²²Forbearance refers to refraining from exercising a legal right to initiate or continue foreclosure proceedings. The Federal Housing Administration was established to broaden home ownership and protect lending institutions. Congress established Fannie Mae and Freddie Mac to (1) provide stability in the secondary market for residential mortgages (also in periods of economic stress) and (2) serve the mortgage credit needs of targeted groups, such as low-income borrowers. On September 6, 2008, the Federal Housing Finance Agency, which oversees Fannie Mae and Freddie Mac, placed both entities into conservatorship out of concern that the deteriorating financial condition of the two enterprises threatened the stability of financial markets.

that provides some affected home owners with two options for assistance.²³ The first option provides eligible affected home owners assistance to pay for defective drywall testing, according to Louisiana officials. The second option provided eligible home owners funds for temporary housing assistance. According to Louisiana officials, this program has conducted defective drywall testing in 32 homes and provided 35 families with temporary housing assistance.

In addition, Virginia allowed its localities to assist some affected home owners by decreasing their property tax liability. To access this option, affected home owners were required to submit test results from an approved testing entity as evidence that their home contained defective drywall. Virginia also passed legislation prohibiting the use or sale of defective drywall and requiring generally that the presence of defective drywall in property either rented or sold be disclosed by anyone who is involved in sales or rentals and is aware of it. Further, Virginia created remediation guidance to address defective drywall in the form of an update to its building code.

Similar to Virginia, localities in Florida were allowed to decrease property tax liability for some affected home owners and one locality in Florida waived building permit fees for remediation of homes with defective drywall. In addition, since 2009, about 20 other bills related to defective drywall have been introduced in multiple states nationally—for example, prohibiting insurers from cancelling or failing to renew a home owner’s insurance policy or increasing rates due to defective drywall—but these bills did not become laws.

- *Task forces.* Florida and Virginia created task forces with state agencies to help address defective drywall. Florida’s task force involved state agencies and federal partners, including the Florida Department of Health, Florida State Fire Marshal, Florida Division of Emergency Management, and CPSC. The purpose of this task force was to identify the scope of defective drywall in Florida homes and keep the Florida public informed. Virginia’s state task force—composed of various stakeholders, including affected home owners and multiple state agencies—was formed to develop a cohesive state response in seeking federal assistance while keeping affected home owners informed. Virginia officials we spoke with told us that although this was the original intent, the task force realized that they could not help home owners remediate their homes because there was no money available at the time from the manufacturers, state government, or federal government.

²³CDBG’s Disaster Recovery Fund provides states with greater flexibility and discretion because many of the statutory and regulatory provisions governing the use of CDBG funds may be waived or modified. Only affected home owners who were previously assisted through the Road Home program—a Louisiana state program established with HUD CDBG disaster recovery funds after Hurricanes Katrina and Rita—can qualify to be assisted through the state’s defective drywall program.

If you or your staff have questions about this report, please contact me at (202) 512-8678 or cackleya@gao.gov. Contact points for our Offices of Congressional Relations and Public Affairs may be found on the last page of this report. Key contributors to this report were Paul Schmidt (Assistant Director), Shamiah T. Kerney, Alma Laris, Marc Molino, Andrew Moore, Jessica Sandler, Jennifer Schwartz, and Andrew Stavisky.



Alicia Puente Cackley
Director
Financial Markets and Community Investment

Enclosure

(250704)

List of Addressees

The Honorable Gerry Connolly
Ranking Member
Subcommittee on Government Operations
Committee on Oversight and Government Reform
House of Representatives

The Honorable Corrine Brown
House of Representatives

The Honorable G.K. Butterfield, Jr.
House of Representatives

The Honorable Theodore E. "Ted" Deutch
House of Representatives

The Honorable Luis V. Gutierrez
House of Representatives

The Honorable Jim Moran
House of Representatives

The Honorable Scott Rigell
House of Representatives

The Honorable Dennis A. Ross
House of Representatives

The Honorable Jan Schakowsky
House of Representatives

The Honorable Debbie Wasserman Schultz
House of Representatives

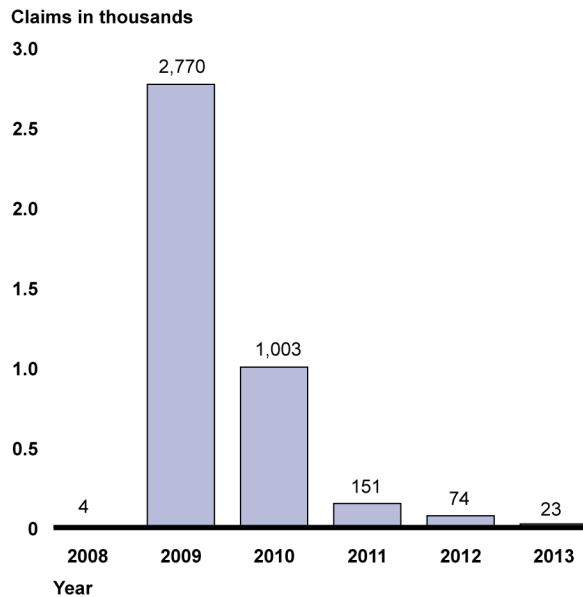
The Honorable Robert C. "Bobby" Scott
House of Representatives

Enclosure

Data on Drywall Reports and Imports, Estimates of Affected Homes, and Selected Drywall-Related Events

According to Consumer Product Safety Commission (CPSC) data, from 2008 through 2013, CPSC received over 4,000 reports with complaints of defective drywall. These reports peaked between 2009 and 2010 and then steadily decreased over the last 3 years (see fig.1).

Figure 1: Number of Defective Drywall Reports to CPSC by Year, 2008–2013



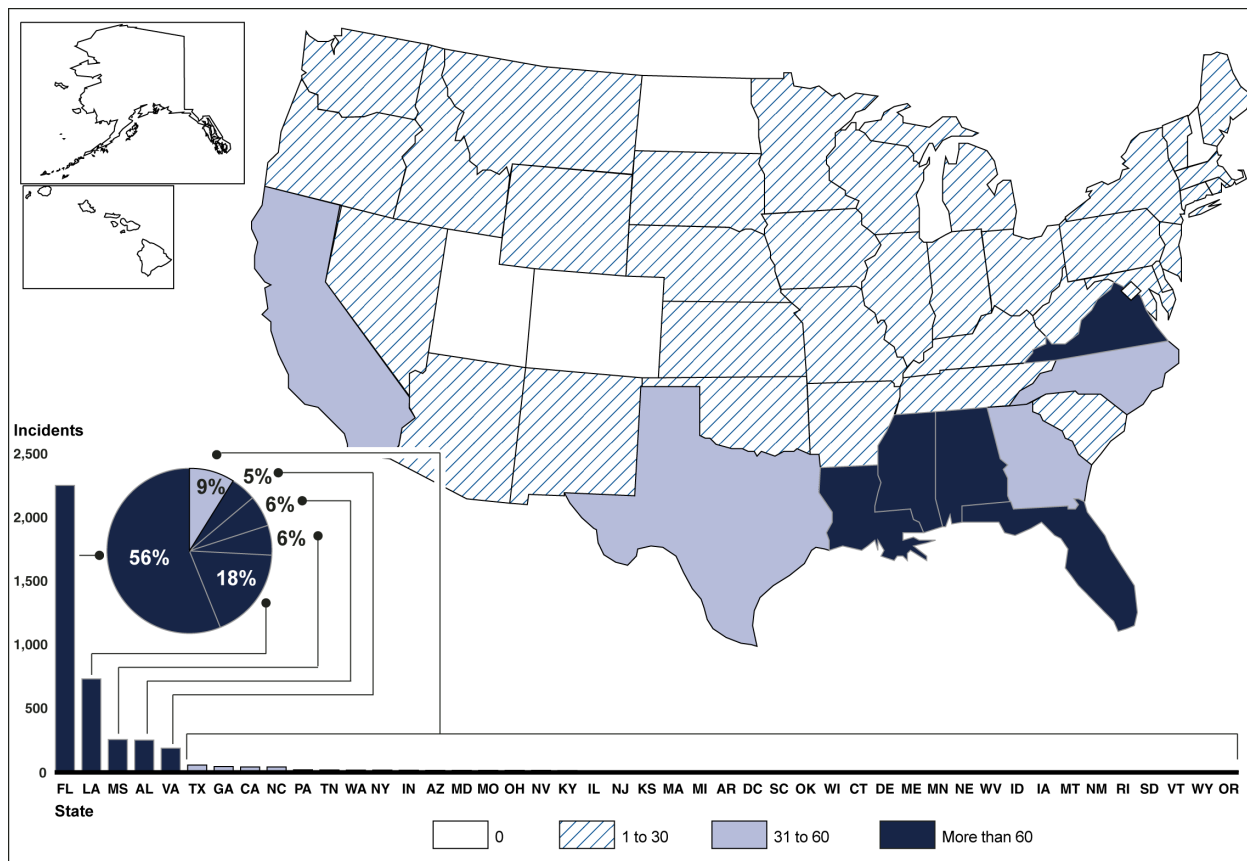
Source: CPSC.

Note: Data for 2008 through 2012 are as of December 31 for each year. Data for 2013 are as of July 18.

CPSC received reports of defective drywall from 44 states and the District of Columbia, with the majority (86 percent) of the reports received from consumers in the Gulf Coast states, including Florida, Louisiana, Mississippi, and Alabama (see fig 2).²⁴ However, the actual number of affected homes is unknown but is likely greater than the number of reports received for a variety of reasons. For example, CPSC officials explained that consumers may not report that their homes have defective drywall due to concerns about reduced property values and potential loss of insurance coverage. CPSC officials also noted that the number of reports received is greater than the number of consumers reporting defective drywall because some consumers made multiple reports.

²⁴CPSC also received reports from American Samoa and Puerto Rico.

Figure 2: Number and Percentage of Defective Drywall Reports to CPSC by State, 2008–2013



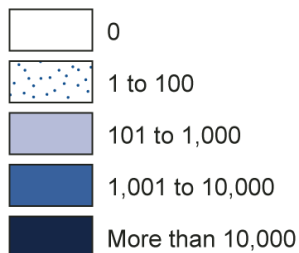
Sources: CPSC (data); Map Resources (map).

Notes: Data for 2008 through 2012 are as of December 31 for each year. Data for 2013 are as of July 18. The 4,025 reports CPSC received include multiple reports from the same consumers. Data are self-reported to CPSC and are not verified.

The geographic dispersion and concentration of defective drywall complaints may be attributed to the ports of entry into the United States for some defective drywall from China. For example, according to data from the Gypsum Association, from 2004 through 2009, drywall imports from China reached 16 U.S. ports, with the majority (88 percent) imported in 2006 (see figs. 3 and 4). Of the drywall imported in 2006, 67 percent was imported through ports in Miami and Tampa, Florida—the state with the highest number of defective drywall reports to CPSC.

Figure 3: Amount of Drywall Imported to the United States from China by Port, 2004–2009 (Drywall Measured in 1,000 Square Feet)

Port	2004	2005	2006	2007	2008	2009
Charleston, SC					47	
Honolulu, HI ^a			2			
Houston, TX			481	106	107	
Los Angeles, CA			6,190	75	101	
Miami, FL		461	119,065	3,125	33	
Mobile, AL			14,743			
New Orleans, LA			35,534	475		
New York, NY	3		6,331	12,105	984	11 ^b
Norfolk, VA			4,805			
Philadelphia, PA			4,872			
San Francisco, CA			8,602	16,389	5,269	
Savannah, GA				46		
St. Albans, VT					11	
St. Louis, MO			24			
Tampa, FL			66,075			
Wilmington, NC			9,431			
Total	3	461	276,155	32,321	6,552	11^b



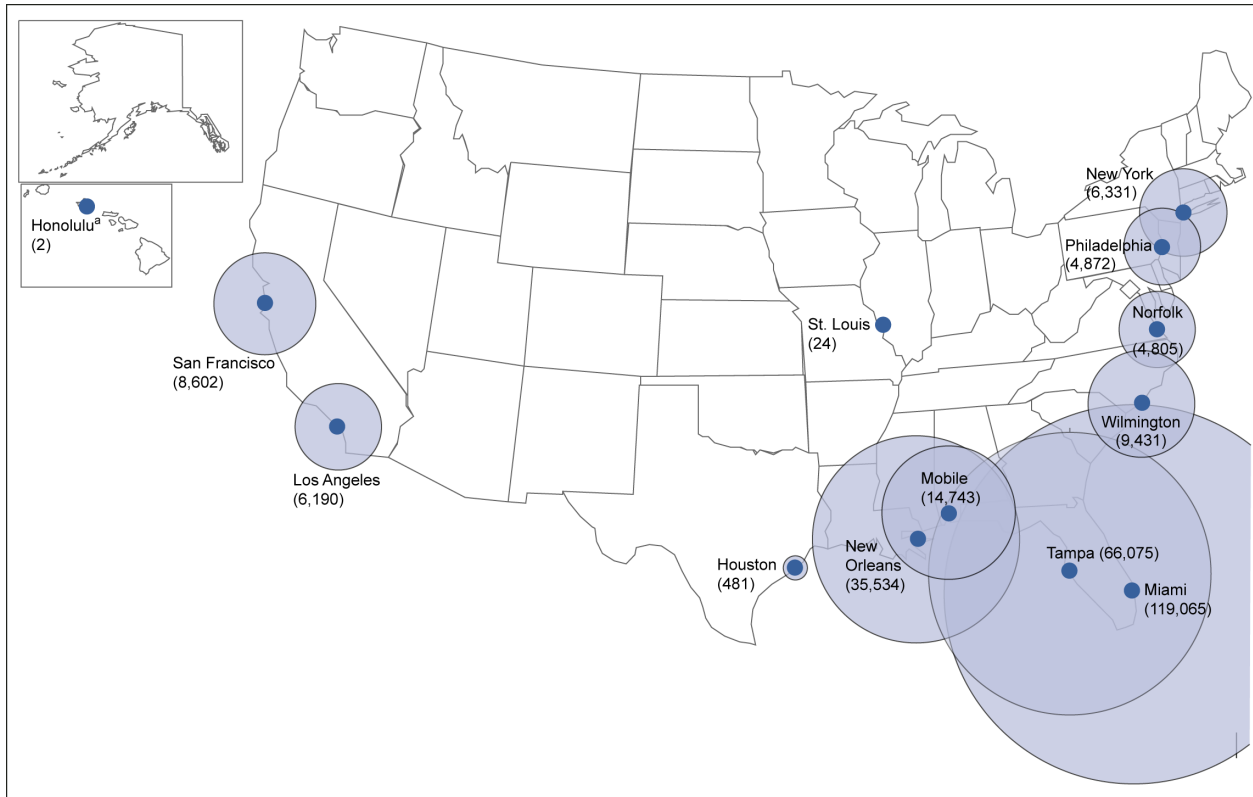
Source: Gypsum Association.

Notes: Only U.S. ports with drywall imported from China are included. Not all drywall imported into the United States from China was defective.

^aImports may have been received at another port in Hawaii.

^bCPSC conducted an investigation and confirmed that no new drywall was imported in 2009 and that drywall installed in 2009 had previously been imported during 2006-2007. Imports in 2009, and other years, listed under the gypsum-related harmonized tariff codes—codes that numerically describe all articles in international trade managed by the World Customs Organization—often included other items such as gypsum ceiling tiles and cement board, and are not gypsum board. For more information, see <http://www.cpsc.gov/PageFiles/115328/IDguidance031811.pdf>.

Figure 4: Drywall Imports to the United States from China by Port in 2006 (Drywall Measured in 1,000 Square Feet)



Sources: Gypsum Association (data); Map Resources (map).

Notes: Only U.S. ports with drywall imported from China are included.
 Not all drywall imported into the United States from China was defective.

^aImports may have been received at another port in Hawaii.

Estimates of the total number of homes affected by defective drywall and the methodology used by different organizations to determine these estimates vary. For example, one organization based its estimates on reviews of property tax data from three of the most affected states and court documentation from drywall-related litigation, while another organization based its estimates on home owner reports of defective drywall from various states and data on drywall imports to the United States from China (see table 1).

Table 1: Selected Organizations' Estimates of Homes with Defective Drywall

Organization	Estimated number of homes	Methodology
ProPublica ^a	6,944	Estimates are based on a review of property tax data from three states and court records from defective drywall lawsuits.
CPSC ^b	8,200	Estimates are based on a review of home owner reports to the agency and data on drywall imports to the United States from China.
HUD ^c	11,000/24,000	Estimates covering 2004-2007 are based on both nonpublic and public CPSC data, data on metric tons of drywall imports to the U.S. from China, and assumptions of the amount of drywall used per square foot in a home.
America's Watchdog ^d	200,000	Estimates are based on the amount of drywall imported into Florida and the organization's inspections of a random sample of 1,500 homes.

Source: Information from ProPublica, CPSC, HUD, and America's Watchdog.

Notes: These estimates are presented for informational purposes to illustrate the range of estimates available. GAO has not assessed the reliability of these estimates.

^aProPublica is an independent, nonprofit newsroom that produces investigative journalism in the public interest. Sarasota Herald-Tribune provides news and information and collaborated with ProPublica to develop its estimates. Property tax data are from 44 counties representing addresses in Florida, Louisiana, and Virginia and from property tax records in these same states. Estimates are as of March 2011.

^bEstimates are as of December 2011.

^cPreliminary estimates indicated that drywall manufactured in China could have been used to construct 25,000 to 31,000 homes. In one analysis, it is estimated that 43 percent of the drywall imported from China was defective. Applying this ratio to the estimated 25,000 homes that may have been constructed with imported drywall, HUD's best estimate is that 11,000 homes may have defective drywall. In another analysis, HUD applied the results from a test of Chinese-manufactured drywall samples to determine sulfur compound emissions. Using these results, it was determined that problems with sulfur compound emissions could occur about 78 percent of the time. Applying this percentage to the higher estimate of 31,000 homes containing drywall manufactured in China equals 24,000 homes.

^dAmerica's Watchdog is a national advocacy group for consumer protection that manages the Drywall Complaint Center. According to the President of America's Watchdog, it developed a low estimate of 120,000 homes with defective drywall by multiplying Florida's estimate of how many homes could be built with the amount of drywall imported into the state—60,000—by two. America's Watchdog also conducted inspections of 1,500 homes affected by hurricanes that contained a mix of domestic and defective drywall manufactured in China. Through these inspections America's Watchdog also found unmarked or "blank" drywall (for which a manufacturer or country of origin could not be identified) that had effects similar to those of defective drywall. Based on this information, as of January 2013, America's Watchdog estimated that at least 200,000 homes contain defective drywall in Florida, Alabama, Mississippi, Louisiana, Southeast Texas, and Virginia combined.

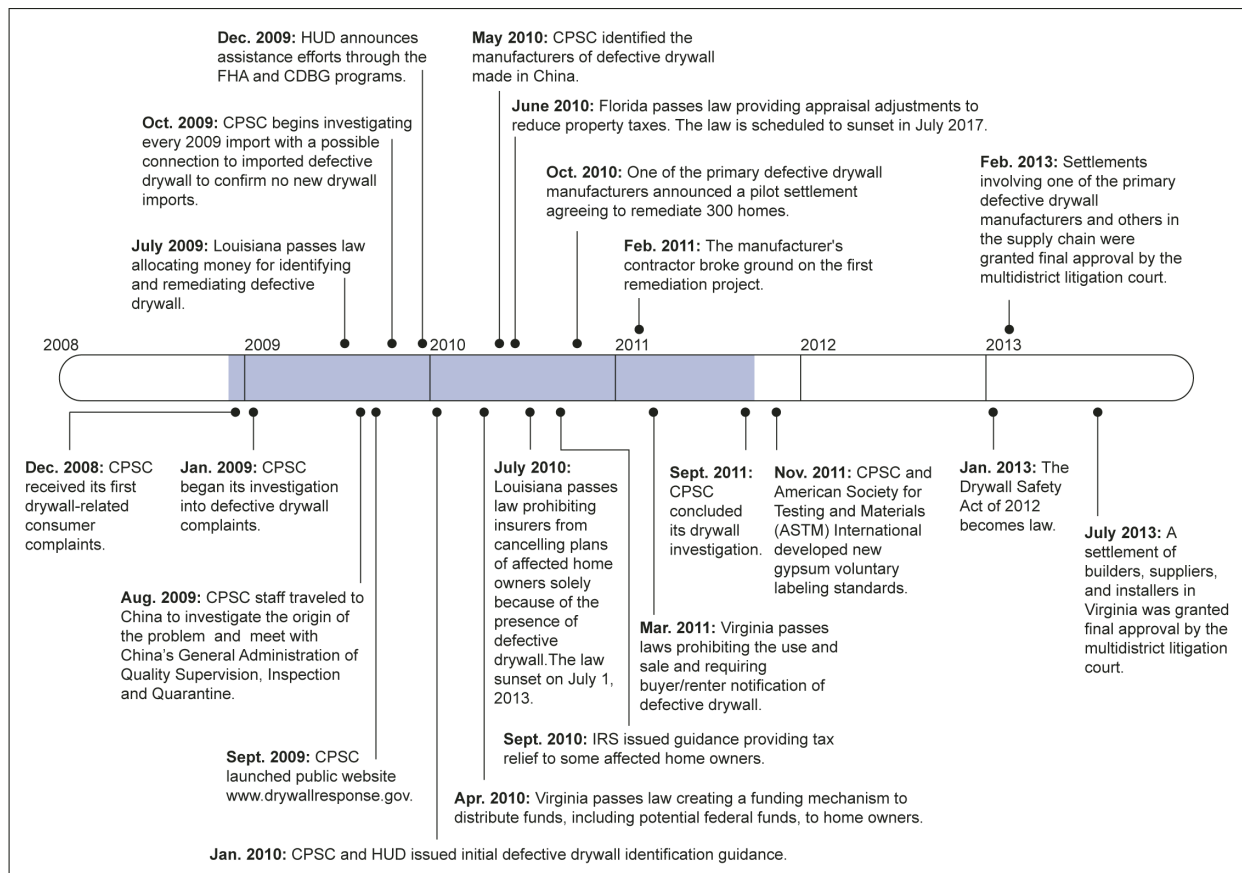
In response to complaints of defective drywall, the Federal Interagency Task Force on Problem Drywall was created in 2009, which included the Centers for Disease Control and Prevention, the Department of Homeland Security, HUD, and the Environmental Protection Agency, with CPSC serving as the lead agency to study issues such as identification and remediation of defective drywall. In 2009, CPSC conducted tests on 51 homes in the southeast United States (41 complaint homes and 10 noncomplaint homes) to determine common signs of the presence of defective drywall. Complaint homes were found to have significantly greater rates of copper and silver corrosion than noncomplaint homes. In addition, indoor air of complaint homes was more likely to contain low-level hydrogen sulfide compared to noncomplaint homes.²⁵

CPSC and HUD issued identification guidance so that home owners, authorities and other interested parties have means to verify whether a particular home is affected by defective

²⁵CPSC also conducted a study of the effects of seasonality and elapsed time on gaseous emissions and rate of corrosion formation in defective drywall. This study of six homes found that emissions increased during periods of elevated heat and humidity and were noticeably reduced in cooler and drier periods.

drywall. The agencies also issued remediation guidance to address the emission of corrosive sulfur gases by defective drywall. The guidance recommended eliminating the source of the corrosion—the defective drywall—and replacing certain building components for safety systems, such as smoke alarms, that may be impaired by drywall-induced corrosion.²⁶ Selected CPSC actions and events related to defective drywall are described in figure 5.

Figure 5: Timeline of Selected Events Related to Defective Drywall



Source: GAO analysis of information from CPSC and state legislation; Legal information from the Multi-District Litigation.

²⁶Specifically, the remediation guidance calls for the replacement of (1) possible defective drywall (as identified in the CPSC and HUD Identification Guidance); (2) smoke alarms and carbon monoxide alarms; (3) electrical distribution components (including receptacles, switches, and circuit breakers, but not necessarily wiring); and (4) fusible-type fire sprinkler heads. The remediation guidance was most recently updated in March 2013. According to CPSC officials, the results of its scientific investigations of corrosive gas emissions from drywall and the effects of corrosion on electrical and fire safety, among others, were the basis for the Federal Interagency Task Force guidance on identification and remediation of defective drywall. Officials also noted that the agency's identification and remediation guidance has helped inform certain relief offered by state and local governments (such as property tax relief), as well as certain private settlements.

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