



UNITED STATES  
CONSUMER PRODUCT SAFETY COMMISSION  
4330 EAST WEST HIGHWAY  
BETHESDA, MD 20814

**Notice of Inquiry for Tracking Labels for Drywall**

This document to be discussed at  
Open Commission Meeting  
Wednesday, December 2, 2009  
(Item 3 on Agenda)

**VOTE SHEET**

Date: **NOV 25 2009**

TO : The Commission  
Todd Stevenson, Secretary

THROUGH: Maruta Z. Budetti, Executive Director *mzb*

FROM : Cheryl A. Falvey, General Counsel *CAF*  
Philip L. Chao, Assistant General Counsel *PMP for PLC*  
Patricia M. Pollitzer, Attorney *MP*

SUBJECT : Identifying Labels for Drywall; Notice of Inquiry

Section 14(c) of the Consumer Product Safety Act authorizes the Commission to require, through rulemaking, labels for a consumer product that would identify the date and place of manufacture of the product, cohort information (batch, run number, or other identifying characteristic), and the manufacturer of the product. 15 U.S.C. 2063(c). Attached is a memorandum from the staff recommending that the Commission issue a Notice of Inquiry ("Notice") requesting comments and information about such a rulemaking with regard to drywall. A draft Notice is attached for your consideration.

Please indicate your vote on the following options.

I. Approve the draft Notice of Inquiry as drafted.

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

II. Approve the draft Notice of Inquiry with changes (please specify changes):

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

**CPSA 6(b)(1) CLEARED for PUBLIC**

**NO MFRS/PRVTL BLKS OR  
PRODUCTS IDENTIFIED**

**EXCEPTED BY: PETITION  
RULEMAKING ADMIN PRCDG**

**WITH PORTIONS REMOVED:** \_\_\_\_\_

Note: This document has not been  
reviewed or accepted by the Commission.  
Initials *RAF* Date *11/25/09*

CPSC Hotline: 1-800-638-CPSC(2772) CPSC's Web Site: <http://www.cpsc.gov>

III. Do not approve the draft Notice of Inquiry.

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

IV. Take other action (please specify):

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date



UNITED STATES  
CONSUMER PRODUCT SAFETY COMMISSION  
WASHINGTON, DC 20207

Date: **NOV 25 2009**

**TO :** The Commission  
Todd Stevenson, Secretary

**THROUGH:** Cheryl A. Falvey, General Counsel *CAF*  
Maruta Z. Budetti, Executive Director *MZB*  
J. Gibson Mullan, Assistant Executive Director *JGM*

**FROM :** Dean W. Woodard, Director, Defect Investigations Division *DW*

**SUBJECT :** Notice of Inquiry; Identifying Labels for Drywall

Attached for Commission consideration is a background paper on some of the issues regarding drywall marking. The paper details some of the concerns Compliance has noted during the current drywall investigation. There will be a briefing on the notice of inquiry on December 2, 2009.

Note: This document has not been  
reviewed or accepted by the Commission.  
Initials *RA* Date *11/25/09*

CPSC Hotline: 1-800-638-CPSC (2772) ★ CPSC's Web Site: <http://www.cpsc.gov>

**CPSA 600(1) CLEARED for PUBLIC**

*α* **NO MFRS/PRVTLBLRS OR  
PRODUCTS IDENTIFIED** *11/25/09*

**EXCEPTED BY: PETITION  
RULEMAKING ADMIN. PRCDG**

**WITH PORTIONS REMOVED:** \_\_\_\_\_

## **I. Introduction**

The Commission's involvement with drywall began with the first reported incidents of home odor on December 22, 2008. A core team of toxicologists, engineers, and compliance officers was formed to investigate the problem. As the Commission staff began its investigation, incident reports multiplied with the primary focal point leading toward Florida. The investigation quickly focused on drywall imports from the People's Republic of China during the post-Katrina reconstruction boom. It soon became evident that it was very difficult to identify the source of the imported materials. Much of the imported drywall was not marked on either face of the board. One company did mark their materials with a dot-matrix profile that was difficult to read. Only one of nine importing companies marked their materials such that it could be easily identified.

As the investigation progressed, the Commission dispatched a team of experts to tour several U.S. drywall manufacturing facilities. Their charter was to gain first-hand knowledge of the operations and processes associated with all aspects of drywall manufacturing including marking, shipping, and storage. The team subsequently went to the People's Republic of China and visited several manufacturing plants and mines, and met with their counterparts at the General Administration of Quality Supervision, Inspection, and Quarantine (AQSIQ). The team also surveyed the markings of numerous Chinese drywall companies by evaluating their product in the building trade markets of Beijing.

The investigation within the United States has included close scrutiny of importers, suppliers, builders, and drywall installers. The Commission staff is establishing the chain of commerce from point of manufacture to home installation. Numerous homes have been inspected with over eight hundred in-depth-investigations (IDI) completed. A rigorous sampling program was instituted with drywall samples; North America and Chinese drywall were chosen for testing. These materials are presently being tested in U.S. national laboratories.

While the initial incident reports were received from Florida consumers, substantial quantities of the imported drywall also made their way to Louisiana and Virginia. As of November 23, 2009, incident reports to the Commission totaled 2091 and encompassed thirty-two states, as well as the Commonwealth of Puerto Rico and District

of Columbia. The investigation is ongoing, but there are several areas of concern. Drywall can be manufactured with either natural or mined gypsum, synthetic gypsum (FGD or flue gas desulfurization), or a combination of the two. The lack of any coherent marking system to designate the type of material used in suspect gypsum board and its source is hampering the investigation. As of the date of this notice, the Commission continues its investigation of the imported drywall.

Problems with drywall fall into two primary categories: those related to health effects and those related to effects on certain components of, or equipment in, the home. The most frequently reported health symptoms are irritated and itchy eyes and skin, difficulty in breathing, persistent cough, bloody noses, recurrent headaches, sinus infection, and asthma attacks. Many reports indicate that the symptoms lessened when the consumer is away from home. As for product-related effects, consumers have reported blackened and corroded metal in their homes, and failures of equipment such as central air conditioning evaporator coils, of appliances such as refrigerators and dishwashers, and of electronic devices such as televisions and video game systems. CPSC is investigating these health effects and the electrical, gas distribution, and fire safety issues stemming from the effects on metal equipment and components.

## **II. The Product**

Drywall, sometimes called gypsum wallboard, is a kraft paper liner wrapped around an inner core made primarily from gypsum plaster, calcium sulfate dihydrate ( $\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$ ). Gypsum is the most common sulfate material. It is an evaporate mineral, a precipitate of ancient seas, lakes, salt flats, associated with sedimentary rocks (so is mined at or below the earth's surface); characterized as paleo-environmental lacustrine and marine conditions (rehydrated and dried repeatedly). It is found in pure deposits or as a secondary mineral in limestone, shale, marl and clay. It is from the Permian age, deposited in lake and sea water, hot springs, from volcanic vapors and sulfate solutions.

The drywall industry is the leading domestic consumer of gypsum. Production of U.S. gypsum totaled 12.7 million tons during 2008. The industry itself is composed of 46 companies producing gypsum at 51 mines in 29 states. Nine of these companies had

calcining operations in 52 plants located in 28 states. Slightly over 85% of all U.S. gypsum produced was earmarked for drywall production. Approximately 10.8 million tons of drywall was fabricated in 2008.

The People's Republic of China (PRC) is now the world's leading producer of gypsum. The PRC utilizes both open strip mines and underground mines. Their industry has transitioned to a rapid expansion with the construction of new drywall manufacturing plants, development of new mines, and government consolidation of existing manufacturing. Gypsum will continue to be produced at high levels to support concrete manufacturing for an expanding infrastructure

Raw gypsum (mined, quarried, FGD) is calcined (dehydrated, typically with natural gas). The plaster is mixed with fiber (typically paper and/or fiberglass), plasticizer, foaming agent, potash as an accelerator, ethylenediaminetetra acetic acid (EDTA) or other chelate as a retarder, and various additives to increase mildew and fire resistance (fiberglass or vermiculite) and water. The wet gypsum is sandwiched between two sheets of heavy paper or fiberglass mats. It sets and then is dried in large chambers (25-45% of the cost is related to energy expended in the manufacturing

The staff has learned from the investigation that the processing parameters vary depending on the raw materials or feedstock. Even more important, variability in the quality of feedstock may contribute to the determination of whether or not a gypsum board may be a hazard. When mined gypsum is used as the feedstock, care must be taken to ensure that the geology is clearly mapped out to avoid any sulfur deposits. Furthermore, the gypsum must be closely checked for purity in order to avoid high levels of pyrite, strontium, and clay. It is possible that the presence of these compounds may account for some of the odors found in homes. On the other hand, mined gypsum without these compounds present would likely make for an odor free board.

Synthetic gypsum is generated as a by-product in flue gas desulfurization (FGD) systems used to reduce sulfur dioxide (SO<sub>2</sub>) emissions from power plants. One of the more common FGD systems uses lime as an alkaline sorbent to "scrub" the acid gases. Synthetic gypsum is produced through the process called Limestone Force Oxidation. This gypsum must be closely monitored for moisture content, chloride levels, and purity; inefficient systems could result in sulfur and other contaminants remaining with the

gypsum. Staff is aware that that several manufacturers are mixing both mined and FGD gypsum together in their manufacturing process.

### **III. Value of Tracking Labels**

The investigation has shown that building supply companies often mix brands together. Staff is aware that several different brands of the same gauge drywall may be delivered for installation into the same home. Generally, inspections have shown that drywall is not inventoried based on brand or country of origin which makes tracing the source of the drywall extremely difficult. If a house exhibits drywall-related problems, knowing the origin of the drywall would provide immediate technical benefits as it may quickly provide the key areas for investigation such as the source of feedstock. During its investigation the staff has found that drywall often lacks any marks on the face of the drywall identifying the manufacturer or the production batch or lot. Virtually all drywall is marked on the end with tape that displays a brand name or manufacturer. However, during the installation process, that tape is removed when the drywall is hung. The vast majority of imported drywall has little or no markings at all on its face. Markings that are present on both domestic and imported drywall are inconsistent. It should be noted that ASTM 1264 requires markings on gypsum panels so the industry already has some voluntary requirement in effect.

The type and source of primary raw materials have become focal points for the Commission staff's investigation. With multiple mines and numerous processes, steps must be taken to ensure that future imports and existing domestic production is appropriately marked to facilitate traceability by lot and batch.

The staff recommends that the Commission issue a Notice of Inquiry that would collect information from industry allowing CPSC to determine whether to begin rulemaking to require that drywall be marked with at least the following information: name of corporation, plant name and location, source material(s) –natural gypsum, synthetic gypsum, or a mixture, a code noting the mine or power plant that supplied the gypsum, date of manufacture, and batch number. The staff recommends that this information should be printed on both faces of the drywall in two horizontal ribbons

parallel to the longitudinal axis with a frequency that is a non-integer of 16 inches. Industry comment on this proposal would be useful before proceeding with any rulemaking.



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[Billing Code 6355-01-P]  
CONSUMER PRODUCT SAFETY COMMISSION

Identifying Labels for Drywall under Section 14(c) of the Consumer Product Safety Act; Notice of Inquiry; Request for Comments and Information

**AGENCY:** Consumer Product Safety Commission.

**ACTION:** Notice of inquiry.

**SUMMARY:** Section 14(c) of the Consumer Product Safety Act authorizes the Consumer Product Safety Commission ("Commission" or "CPSC") to require, through rulemaking, labels for a consumer product that would identify the date and place of manufacture of the product, cohort information (batch, run number, or other identifying characteristic), and the manufacturer of the product. 15 U.S.C. 2063(c). This notice requests comments and information about such a rulemaking with regard to drywall.

**DATES:** Written comments must be received by [insert date 60 days after publication in *Federal Register*].

**ADDRESSES:** You may submit comments, identified by Docket No. \_\_\_\_\_ [INSERT NUMBER], by any of the following methods:

Electronic Submissions

Submit electronic comments in the following way:

Federal eRulemaking Portal: <http://www.regulations.gov>.

Follow the instructions for submitting comments.

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To ensure timely processing of comments, the Commission is no longer accepting comments submitted by electronic mail (e-mail) except through [www.regulations.gov](http://www.regulations.gov).

### **Written Submissions**

Submit written submissions in the following way:

Mail/Hand delivery/Courier (for paper, disk, or CD-ROM submissions), preferably in five copies, to: Office of the Secretary, Consumer Product Safety Commission, Room 502, 4330 East West Highway, Bethesda, MD 20814; telephone (301) 504-7923.

Instructions: All submissions received must include the agency name and docket number for this rulemaking. All comments received may be posted without change, including any personal identifiers, contact information, or other personal information provided, to

<http://www.regulations.gov>. Do not submit confidential business information, trade secret information, or other sensitive or protected information electronically. Such information should be submitted in writing.

Docket: For access to the docket to read background documents or comments received, go to <http://www.regulations.gov>.

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**FOR FURTHER INFORMATION CONTACT:** Joel Recht, Project Manager, U.S. Consumer Product Safety Commission, 4330 East West Highway, Bethesda, MD 20814; telephone (301) 504-7625; [jrecht@cpsc.gov](mailto:jrecht@cpsc.gov).

### **SUPPLEMENTARY INFORMATION:**

#### **A. Background**

Since December of 2008, the Commission has been receiving reports of various problems related to drywall primarily imported from the People's Republic of China. The first reports came primarily from Florida and were related to the building boom and post-hurricane construction. As reports continued to come in, it became apparent that the drywall issue was more widespread. Currently, CPSC has received over 2000 incident reports from 32 states, the District of Columbia and Puerto Rico. The Commission has expanded its investigation to include both imported and domestically manufactured drywall.

Problems described in these reports include odor, health effects and corrosion effects on certain metal components in the home. The most frequently reported health symptoms are irritated and itchy eyes and skin, difficulty in breathing, persistent cough, bloody noses, recurrent headaches, sinus infection, and asthma attacks.

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Many reports indicate that the symptoms lessen when the consumer is away from home. As for corrosion-related effects, consumers have reported blackened and corroded metals and electrical wiring in their homes and failures of such equipment as evaporator coils of central air conditioners. There have also been reports of failures of appliances such as refrigerators and dishwashers, and of electronic devices such as televisions and video game systems.

CPSC is investigating the health effects and the potential electrical and fire safety issues stemming from the corrosion of metal equipment and components. CPSC is working with a number of state and federal partners in this investigation including the U.S. Environmental Protection Agency, U.S. Department of Housing and Urban Development, Centers for Disease Control, Agency for Toxic Substance and Disease Registry and several state departments of health and state attorneys general. In the course of this investigation, Commission staff has visited several U.S. and Chinese drywall manufacturing facilities and mines. CPSC staff is analyzing information received from consumers, builders, importers, manufacturers and suppliers of drywall to better determine the scope of the drywall

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problem. CPSC and its state and federal partners are conducting a number of technical studies to determine connections between the emissions from drywall and the reported health and corrosive effects.

CPSC's investigation indicates that it is often difficult to determine the manufacturer and origin of drywall in homes. As further discussed in the next section, the investigation also indicates that there can be a good deal of variability in drywall depending on its type and origin. Being able to identify the manufacturer and origin of drywall could aid in investigating complaints related to drywall and narrow the scope of any investigation or necessary remedial action in the future.

### **B. The Product**

Drywall, sometimes also called gypsum board, plasterboard or wallboard, is a kraft paper liner wrapped around a plaster mix consisting primarily of gypsum. There are essentially two types of gypsum: mined gypsum; and synthetic gypsum. These two types are sometimes combined.

Mined gypsum is found in sedimentary rock formations among limestone, shale, marl and clay. Characteristics of the mined gypsum can vary depending on the geology in the region where it is mined or quarried. Nearby sulfur

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deposits and marine conditions may affect the quality of the gypsum.

Synthetic gypsum is an alternative to natural mined gypsum. It is a byproduct generated from flue gas desulfurization ("FGD") in fossil-fueled power plants.

There can be variability in gypsum depending on where it is mined and the manufacturing process employed. Gypsum mined in some areas may have higher levels of sulfur, strontium, carbonate, or pyrite; some of these chemicals could affect drywall's behavior in homes. Similarly, some flue gas sources may have higher or lower concentrations of these and other compounds.

There are eight domestic drywall manufacturers in the United States, with plants spread throughout the country and North America. Two domestic manufacturers are ranked among the top five drywall producers in the global market. In 2008, the United States drywall production totaled an estimated 26.4 billion square feet. In 2006, the total domestic production of 35.0 billion square feet was not enough to meet demand that year. As a result, parties found themselves importing drywall from China and other countries to meet construction needs. In 2006,

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approximately 218,100 metric tons of drywall was imported from China.

The drywall manufacturing process is rather standard throughout the industry. To make drywall, the raw gypsum (whether mined, FGD or a combination) is dehydrated (sometimes called "calcined"), typically with natural gas. A slurry is made consisting of gypsum and additives such as fiber (typically paper and/or fiberglass), plasticizer, foaming agent, potash as an accelerator, water, ethylenediaminetetra acetic acid or other chelate as a retarder. The additives are based on whether the drywall is to be standard, fire resistant, or mildew or water resistant. The slurry is fed between continuous layers of paper on a board machine. As the board moves down a conveyer line, the mixture hardens. The paper becomes bonded to the solid slurry mix. The board is then cut to requested lengths and conveyed through dryers to remove any free moisture. The lengths and thickness of the board vary depending on the typical building code or usage requirements.

At a certain point along the conveyer line, most domestic manufacturers mark the board with a stamp which may include the company name, logo, brand name, plant

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location, production date, and time. However, this practice is not standard for every drywall manufacturer in the global marketplace.

### **C. Need for Better Identification of Drywall**

CPSC's investigation has shown that building supply companies often stock drywall based on purpose, type, length and thickness, rather than brand name. Therefore, various drywall brands could be sold to fill a single construction project order. Since construction customers generally do not inventory drywall based on brand or country of origin it makes identifying the source/manufacturer of the drywall difficult once the product is installed.

In the course of its investigation, CPSC staff has found that drywall often lacks any marks on its face or backing identifying the manufacturer or the production batch or lot. Identifying markings on the drywall could help consumers and investigators to isolate the source of drywall problems in the future. Being able to identify the brand and lot or batch could further narrow the focus of an investigation to discrete sets of drywall. The majority of imported drywall has little or no markings at all on its face. Most domestic drywall has markings that identify the



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manufacturer. Any markings that are present on domestic or imported drywall whether on the board or tape are inconsistent as to both content and placement. Most drywall is sealed on the ends with tape that displays a brand name or manufacturer's name. During the installation process, however, that tape is often removed.

### **D. Statutory Authority**

Section 14(c) of the CPSA authorizes the Commission to issue a rule requiring labels (and prescribing their form and content) containing source information, such as date and place of manufacture of a consumer product, cohort information (including batch, run number or other identifying characteristic), and identification of the manufacturer or private labeler. 15 U.S.C. 2063(c).

Section 14(c) allows the Commission, where practicable, to require that the identifying labels be permanently marked or affixed to the product. *Id.* Such an identifying permanent mark would be consistent with section 103 of the Consumer Product Safety Improvement Act, entitled "Tracking Labels for Children's Products," which requires "permanent distinguishing marks" stating certain identifying information on children's products and their packaging. Section 14(c) of the CPSA also authorizes the

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Commission to permit information about the date and place of manufacture and cohort information to be coded. 15 U.S.C. 2063(c).

The Commission is considering a rulemaking that would require manufacturers of drywall to label/mark their products to identify (1) the name of the manufacturer; (2) the plant name and location; (3) the source material (i.e., natural gypsum, synthetic gypsum or a mixture); (4) a code to identify the mine or power plant that supplied the gypsum; (5) the date of manufacture of the drywall; and (6) the batch or lot number.

The Commission requests comments on such a requirement and on the specific issues mentioned in the following section. If the Commission were to initiate such a rulemaking, it would do so with the issuance of a notice of proposed rulemaking.

### **E. Request for Comments**

The Commission requests comments on the possibility of initiating a rulemaking proceeding to require identifying labels on drywall. Specifically, the Commission requests comments and information on the following specific issues:

1. What labeling or markings are companies currently providing on drywall?

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2. What would be the cost impact if the Commission were to require identifying labels/markings of the type discussed in this notice on drywall?
3. What, if any, other identifying information should be required?
4. Should there be a uniform format for the labels/markings, and if so, what should it be?
5. How can CPSC assure that the identifying label/markings is accessible after the drywall is installed?
6. What would the impact be on industry of requiring identifying information to be printed on both faces of the drywall in two horizontal ribbons parallel to the longitudinal axis with a frequency that is a non-integer of 16 inches?

Dated: \_\_\_\_\_

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Todd Stevenson, Secretary  
U.S. Consumer Product Safety Commission