



# Are you a disaster volunteer?

Sign up with the Department of Labor and Industry to share your expertise when a disaster strikes Minnesota

In Minnesota, tornadoes commonly occur each month from March through November. Historically, June is the month with greatest frequency, closely followed by July. The most probable danger period in Minnesota is late spring and early summer between 2 and 9 p.m.

According to Minnesota's State Climatology Office, the greatest number of tornadoes in Minnesota (1950-2007) were:

- one year: 74 in 2001
- one month: 38 in 2001
- one day: 27; June 16, 1992

In a typical year, more than two dozen tornados are reported in Minnesota. Less frequently, but equally devastating, are floods that cause damage to a wide area and affect thousands of homeowners.

The DLI is once again asking code officials and qualified assistants to consider participating as a disaster assistance volunteer to help when a disaster strikes. These volunteers are vital when providing assistance with building evaluations about life safety habitability issues for structures affected by a disaster.

When a disaster strikes, the list of volunteers is used to link code officials and qualified assistants with state and county emergency management officials and affected regional code officials.

Those who have offered their service as a disaster assistance volunteer say they found the experience to be rewarding, both personally and professionally.

Volunteers gain valuable, firsthand experience in what it takes to participate in an event, and be a valued participant who assists with the overwhelming needs following a disaster.

There is a need for volunteers to participate in all regions of the state.

For more details and a volunteer form, visit the DLI disaster preparedness Web site at [www.doli.state.mn.us/bc\\_disaster\\_preparedness](http://www.doli.state.mn.us/bc_disaster_preparedness).

# At the Capitol

## Minnesota Building Code is now statewide



### State Building Code

The 2008 Minnesota Legislature passed legislation that will have a significant positive impact on construction in Minnesota. In part, this legislation, carried by the Builders Association of Minnesota, has the following effects.

**The minimum construction standard statewide is now the Minnesota State Building Code.** Although it is not enforceable by municipalities unless it is adopted by local ordinance, this law creates a level playing field for the construction industry by establishing the Minnesota State Building Code as the standard for the construction of all buildings in the state.

Following are excerpts of the new law that will be contained in Minnesota Statute 16B.62 Subdivisions 1a and 1b:

#### Application (1a):

The state building code is the standard that applies statewide for the construction, reconstruction, alteration, and repair of buildings and other structures of the type governed by the code. The State Building Code supersedes the building code of

any municipality. The State Building Code does not apply to agricultural buildings except with respect to state inspections required or rulemaking authorized by sections 103F.141; 216C.19, subdivision 9; and 326.244.

#### Municipal enforcement (1b)

(a) If, as of January 1, 2008, a municipality has in effect an ordinance adopting the State Building Code, that municipality must continue to administer and enforce the State Building Code within its jurisdiction. The municipality is prohibited from repealing its ordinance adopting the State Building Code. This paragraph does not apply to municipalities with a population of less than 2,500 according to the last federal census that are located outside of a metropolitan county, as defined in section 473.121, subdivision 4.

(b) If a municipality is not required by paragraph (a) to administer and enforce the State Building Code, the municipality may choose to administer and enforce the State Building Code within its jurisdiction by adopting the code by ordinance.\*

\* Appointing a certified building official and establishing a fee schedule.

Some existing state building code provisions remain where enforcement is still mandatory throughout the state. These include electrical, elevator,

accessibility, high-pressure piping, boiler, manufactured home, bleacher safety and commercial plumbing. With the exception of accessibility, these codes are enforced by the Construction Codes and Licensing Division in areas of the state where the code has not been adopted locally.

### Use of ungraded lumber

The Minnesota State Building Code currently controls the structural use of lumber used in the construction of buildings.

Municipalities that have adopted the building code will continue to enforce the provisions for lumber use found in the code. However, a provision was added by the legislature that addresses the use of lumber in areas of the state that had not adopted the state building code. It states, "The code must allow the use of ungraded lumber in geographic areas of the state where the code did not generally apply as of April 1, 2008, to the same extent that ungraded lumber could be used in that area before April 1, 2008."

# Recent legislation affects plumbing trade

## Restricted plumber license

The deadline to apply for a “restricted” license for plumbers working in cities with less than 5,000 population and rural areas has been extended.

Unlicensed people with two or more years of experience can apply by Sept. 30, 2008 for a “restricted” license. The original deadline was Dec. 31, 2007, but that opportunity to apply has been extended by the legislature for people who qualify and apply as described below.

## History of the license

Since Dec. 1, 2007, all people — statewide — working at the business of plumbing have been required to be licensed plumbers or registered apprentices.

The one exception is those people who install sewer or water service pipes outside buildings who are certified with pipe laying training and have a \$25,000 plumbing code compliance bond filed with the Department of Labor and Industry.

Those with restricted licenses may perform plumbing everywhere in the state except in cities with a population of 5,000 or more.

## Application requirements for restricted plumber licensing:

- Two years of practical plumbing experience are required for restricted journeyman plumber license.
- Four years of practical plumbing experience or two years as a plumbing contractor are required for restricted master plumber license.

Applicants who are currently or have been registered plumber apprentices or licensed journeymen also can apply.

An application form must be submitted by Sept. 30, 2008, with:

- a \$30 application fee;
- evidence of workers’ compensation insurance (if applicant has any employees);
- proof of liability insurance (if applicant will be a plumbing contractor).

Annual license fees are the same as for master and journeyman (\$120 and \$55, respectively). These fees are payable annually with renewal of the licenses. Visit [www.doli.state.mn.us/pdf/pe\\_restricted\\_plumbing\\_licenses.pdf](http://www.doli.state.mn.us/pdf/pe_restricted_plumbing_licenses.pdf) for more information.

## Additional plumbing-related legislative changes include:

- Persons licensed as manufactured home installers under chapter 327B are not required to be licensed under sections 326B.42 to 326B.49 when connecting the exterior building drain sewer outlets to the above ground building sewer system and when connecting the exterior water line to the above ground water system to the manufactured home as described in National Manufacture Housing Construction and Safety Standards Act of 1974, United States Code, title 42, section 5401 et seq.

No additional licensure, bond, or insurance related to the scope of work permitted under this subdivision may be required of a licensed manufactured home installer by any unit of government.

- The statutory prohibition on water-free urinals was removed, to allow development of state rules on this technology. Yet, there are still prohibitions in rule that prevent approval of water-free urinals until rules are promulgated.

## Recovery fund

### Contractor Recovery Fund sees minor changes

The 2008 Minnesota Legislature passed legislation that clarifies some provisions of Minnesota Statutes 326B.89 relating to the Contractor Recovery Fund. View the details of the legislative action at [www.doli.state.mn.us/pdf/recoveryfund\\_08legislation.pdf](http://www.doli.state.mn.us/pdf/recoveryfund_08legislation.pdf)

# Effects of 2008 legislation on boiler operator licensing

The 2008 Minnesota Legislature passed legislation, effective, May 16, 2008, that has significant impact on boiler operator licenses in Minnesota. In part, this legislation has the following effects.

## Increased horsepower limitations

The following licensees will now be able to be “in charge” in these horsepower boilers plants:

- Special Engineer up to 50 horsepower
- Second Class engineer up to 100 horsepower
- First Class engineer up to 500 horsepower
- Chief Class engineer unlimited horsepower

The following licensees can now be “shift engineers” in these horsepower boiler plants:

- Special Engineer up to 100 horsepower
- Second Class engineer up to 500 horsepower
- First Class engineer unlimited horsepower

## Provisional First Class A or B

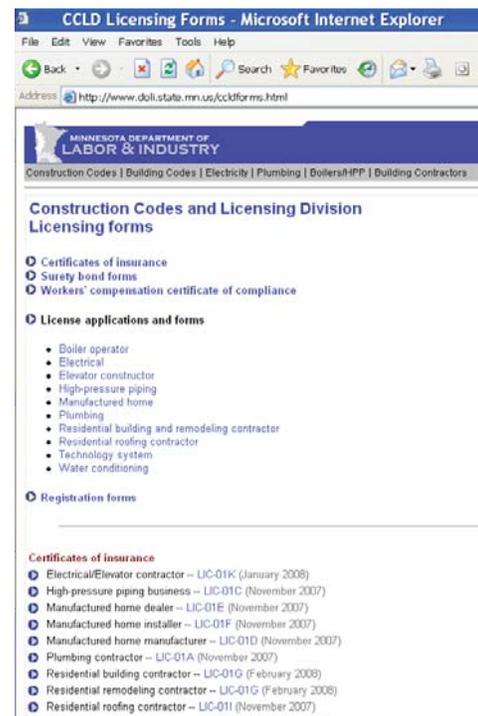
This license was created to allow currently licensed second class A or B licensed engineers to be “shift engineers” in boiler plants over 500 horsepower. The requirements are:

- The boiler plant must have a properly licensed chief engineer designated in charge of the boiler plant in accordance with Minnesota Rule 5225.0410.
- The boiler plant employee who will be issued the provisional license

holds a valid license as a second class engineer grade A or B.

- The chief engineer in charge of the boiler plant submits an application to the commissioner on a form prescribed by the commissioner to elicit information on whether these requirements have been met.
- The chief engineer in charge of the boiler plant and an authorized representative of the owner of the boiler plant both sign the application for the provisional license.
- The owner of the boiler plant has a documented training program with examination for boilers and equipment at the boiler plant to train and test the boiler plant employee.
- If the application were to be granted, the total number of provisional licenses for employees of the boiler plant shall not exceed the total number of properly licensed first class engineers and chief engineers responsible for the safe operation of the boilers at the boiler plant.
- Each provisional license expires 36 months after the date of issuance unless revoked less than 36 months after the date of issuance. A provisional license may not be renewed.
- The commissioner may issue no more than two provisional licenses to any individual within a four-year period.
- The one time fee for the provisional license is \$50.
- The person who holds the provisional license can be a “shift

**Continues on Page 5**



## Searching for a form?

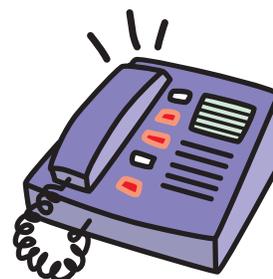
Visit CCLD's licensing forms at [www.doli.state.mn.us/cclldforms](http://www.doli.state.mn.us/cclldforms).

Find documents that range from certificates of insurance to water conditioning license applications.

## Not sure who to call at CCLD?

Visit the contact page at: [www.doli.state.mn.us/cclldcontactus](http://www.doli.state.mn.us/cclldcontactus).

The CCLD phone and e-mail address list includes contacts for specific issues.



## Independent contractor rules progressing

The Department of Labor and Industry's Construction Codes and Licensing Division is working to meet requirements of legislation that requires individuals who wish to work as independent contractors to have an Independent Contractor Exemption Certificate effective Jan. 1, 2009.

Without this certificate, a person doing construction work is an employee of the contractor for whom they are working.

This rule process included a hearing before an administrative law judge to determine the appropriate requirements for the state's residential and commercial

construction independent contractors. The rulemaking process will be finished by mid-August.

In addition, the CCLD is establishing technical processes to efficiently operate its new program, which is estimated to involve 25,000 applications statewide.

Applications will be available this fall and the DLI will begin to accept the applications on Sept. 1, 2008.

For more information about the Independent Contractor Exemption Certificate and updates on the rulemaking progress visit [www.doli.state.mn.us/ic](http://www.doli.state.mn.us/ic), call (651) 284-5074 or send an e-mail message to [dli.ic@state.mn.us](mailto:dli.ic@state.mn.us).

### Continued from Page 4 - *Effects of 2008 legislation on boiler operator licensing*

engineer" only at the boiler plant where they were employed at the time of the license application.

A public utility, cooperative electric association, generation and transmission cooperative electric association, municipal power agency, or municipal electric utility that employs licensed boiler operators who are subject to an existing labor contract may use a provisional licensee as an operator only if it does not violate the labor contract.

#### Special engineer age limit

Individuals may now test for a special engineers license at the age of 16 provided they are enrolled in a training course approved by the commissioner and have habits and experience that would justify believing they would safely perform the duties of a special engineer.

#### Rulemaking authority

The DLI was granted rulemaking authority to adopt rules that may establish continuing education requirements prior to the renewal of a boiler license. The department was also granted rule making authority to establish an educational equivalency for each grade of license that may offset some of the operating experience currently required by law. The department publishes information about its rulemaking activities on its Web site prior to rule adoption. The department anticipates that these rules will not be in effect for at least 18 months.

#### Historical boiler licensing

The changes to this license will now allow individuals who are at least 16 years old to obtain the historical or hobby boiler license provided the following requirements are met. The applicant:

- must be at least 16 years old at the time of application;

- must have a licensed second class grade A or higher class engineer or steam traction (hobby) engineer sign an affidavit attesting to the applicant's competence in operating these devices and that the applicant has demonstrated the ability to perform each task on the list, approved by the chief boiler inspector, of tasks associated with the operation of the devices;

- must have at least 50 hours of operating experience on the devices, eight hours of which must be operating the boiler under load, and up to 16 hours of which may be satisfied by attending a school of instruction;

- must pass a written test for competence in operating the devices;

- must pay the required fee.

This license is valid for the lifetime of the licensee unless revoked for cause. A onetime fee will be charged.

# New rules, CE criteria for some inspectors

New state rules require construction code inspectors hired on or after Jan. 1, 2008, to meet minimum competency criteria and fulfill continuing education requirements. The rules became effective May 5, 2008.

Construction code inspectors affected by the new rules include:

- building inspectors
- plumbing inspectors
- mechanical inspectors
- combination inspectors

Construction code inspectors perform building, mechanical and plumbing inspections under the supervision of the designated building official of each municipality that administers the Minnesota State Building Code.

Inspectors hired after Jan. 1, 2008, have one year to meet the minimum competency criteria.

In addition, building, mechanical and plumbing inspectors must complete 15 hours of continuing education each year of which six of the hours must be in the discipline of their competency. Combination inspectors must complete 20 hours of continuing education each year of which six must be in each discipline.

Visit [www.doli.state.mn.us/buildingcodes](http://www.doli.state.mn.us/buildingcodes) to view the new rules.

## Common questions about the competency criteria change

The Department of Labor and Industry has responded to several questions about the new rules. The most common include:

### Do the competency rules apply to a plans examiner?

No, provided they do not conduct building, mechanical or plumbing inspections.

### Does the State of Minnesota keep track of my competency and my continuing education?

No. Minnesota Rules, part 1301.1300 requires the designated building official to administer the rules.

### I was hired as a building and mechanical inspector on Feb. 18, 2008, does the competency rule apply to me?

Yes. Minnesota Statutes section 16B.665 and Minnesota Rules part 1301.1400 require that all construction code inspectors hired on or after Jan. 1, 2008, shall within one year, be in compliance with the competency criteria.

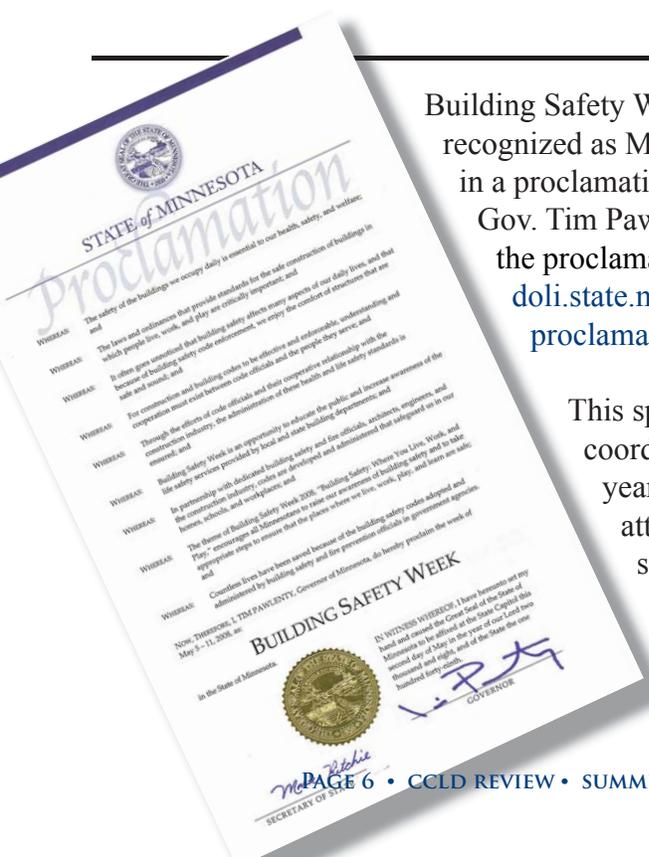
## Safety Week

Building Safety Week was recognized as May 5-11, 2008, in a proclamation signed by Gov. Tim Pawlenty. View the proclamation at [www.doli.state.mn.us/pdf/proclamation2008.pdf](http://www.doli.state.mn.us/pdf/proclamation2008.pdf)

This special week is coordinated each year to bring attention to safe building practices.



Code and construction officials pose for a picture to recognize Building Safety Week with a proclamation signed by Gov. Tim Pawlenty. Front: Patrick Parsley, AMBO; Steve Sviggum, DLI commissioner; Tom Joachim, DLI assistant commissioner. Back: Tom Anderson, state building official; Dale Schoeppner, 10,000 Lakes Chapter of Building Officials; Britt Pease, MBPTA president; and Gary Yoder, AMBO.



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To receive e-mail notification about future issues of the *CCLD Review*, [subscribe online](#). Send any questions, story ideas or comments to [dli.ccldreview@state.mn.us](mailto:dli.ccldreview@state.mn.us).

## Contact information

**CCLD main phone number**  
(651) 284-5012

**CCLD staff phone numbers and e-mail addresses:**  
[www.doli.state.mn.us/cclcontactus.html](http://www.doli.state.mn.us/cclcontactus.html)

## Licensing information

[DLI.Licensing@state.mn.us](mailto:DLI.Licensing@state.mn.us)  
Electrical: (651) 284-5031  
Boiler: (651) 284-5080  
Residential Building Contractors:  
(651) 284-5034

## Building Code information

Phone: (651) 284-5068  
Toll-free: 1-800-657-3944  
Fax: (651) 284-5749  
TTY: (651) 297-4198  
[bcsd.response@state.mn.us](mailto:bcsd.response@state.mn.us)

## Electrical Inspection

Phone: (651) 284-5064  
Fax: (651) 284-5749  
[DLI.Electricity@state.mn.us](mailto:DLI.Electricity@state.mn.us)

## Boiler, High-Pressure Piping, Boats-for-Hire inspection

Phone: (651) 284-5544  
Fax: (651) 284-5737  
[DLI.Code@state.mn.us](mailto:DLI.Code@state.mn.us)

## Plumbing information

Phone: (651) 284-5067  
Fax: (651) 284-5748  
[DLI.Plumbing@state.mn.us](mailto:DLI.Plumbing@state.mn.us)

## Residential Building Contractor information

Phone: (651) 284-5069  
Fax: (651) 284-5749  
[DLI.Contractor@state.mn.us](mailto:DLI.Contractor@state.mn.us)

# Plumbing Code marks 75 years

This year is the 75th anniversary of the Minnesota Plumbing Code and the establishment of statewide licensing requirements for plumbers working in cities of 5,000 population or more.

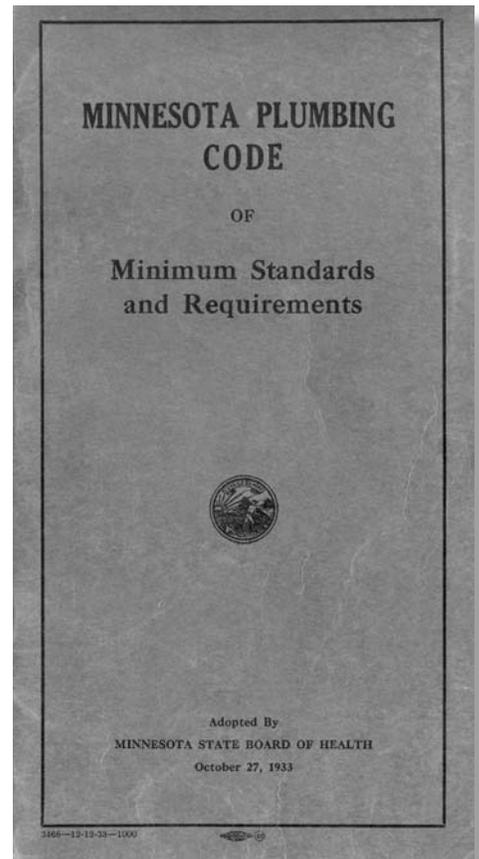
## A deadly start

An outbreak of amoebic dysentery among visitors to the 1933 World's Fair in Chicago that caused 1700 illnesses and 98 deaths spurred health officials across the U.S. to create regulations intended to reduce the thousands of illnesses and many deaths from contaminated drinking water and disposal of sewage.

Following the outbreak in 1933, the Minnesota Board of Health adopted a plumbing code intended to reduce the risk of contamination of drinking water and provide for proper disposal of sewage. The Minnesota Plumbing Code adopted by the Minnesota Board of Health on Oct. 27, 1933, set standards for installation of plumbing systems in Minnesota to prevent contamination of drinking water, provide for the safe disposal of sewage and prevent sewer gasses from entering buildings.

The Minnesota Plumbing Code (now Minnesota Rules, Chapter 4715) became a mandatory statewide code in 1969, and has been updated many times since, to provide for regulation of plumbing and plumbing systems.

Licensing of plumbers working in cities of more than 5,000 in population also began in 1933.



A digital copy of the Oct. 27, 1933 edition of the Minnesota Plumbing Code book is available on the [DLI Web site](#).

Individuals who had been in the business of plumbing prior to Jan. 1, 1933, could obtain a plumber's license without examination from the Plumbers Examiners with the proper application and fee. Those who couldn't qualify under this initial licensing would have to pass an examination by the Plumbers Examiners to show they were qualified on the basis of their knowledge and experience to obtain the license.

Visit [www.doli.state.mn.us/pdf/plumbing\\_codebook.pdf](http://www.doli.state.mn.us/pdf/plumbing_codebook.pdf) to view a digital copy of the 1933 book.

## One layer of shingles allowed

A 2007 code change states that only one layer of asphalt shingles is allowed on roofs in Minnesota counties that have been designated as “moderate hail exposure” counties. See the map of counties that are designated as moderate to severe hail exposure at [www.doli.state.mn.us/pdf/bc\\_map\\_hail.pdf](http://www.doli.state.mn.us/pdf/bc_map_hail.pdf).

When undertaking a re-roofing project in those moderate hail exposure counties, a second layer of shingles is prohibited from being installed over existing shingles. All old materials must be removed to bare wood sheathing before replacing the damaged shingles. For more information, view the printable “Asphalt Shingle Roofing” brochure at [www.doli.state.mn.us/pdf/bc\\_webroofing\\_06\\_07.pdf](http://www.doli.state.mn.us/pdf/bc_webroofing_06_07.pdf)



There are advantages to tearing off the old roof before installing a new one. For example:

- Any defects in the roof deck will be revealed when the roof is torn off.
- Condensation problems can be addressed and attic ventilation installed.
- An ice protection underlayment could be installed to help protect against ice damage.
- Tearing off the old roof will typically result in a longer roof life than when the roof has been laid over.

## Tornado raises questions about garage door limits

The deadly May 25, 2008, tornado in Hugo, Minn., raised questions about the required strength of garage doors for one- and two-family dwellings and town homes designed and constructed in accordance with MSBC Chapter 1309.

Section R301.2.1 of the 2006 IRC (shown below) contains new language adding garage doors to a list of building components limited by a wind speed of 90 mph for a 3-second gust. The wind loads are specified in Table R301.2 (2) as adjusted for height and exposure by Table R301.2 (3).

**R301.2.1 Wind limitations.** Buildings and portions thereof shall be limited by wind speed, as defined in Table R301.2(1) and construction methods in accordance with this code. Basic wind speeds shall be determined from Figure R301.2(4). Where different construction methods and structural materials are used for various portions of a building, the applicable requirements of this section for each portion shall apply. Where loads for wall coverings, curtain walls, roof coverings, exterior windows, skylights, garage doors and exterior doors are not otherwise specified, the loads listed in Table R301.2(2) adjusted for height and exposure using Table R301.2(3) shall be used to determine design load performance requirements for wall coverings, curtain walls, roof coverings, exterior windows, skylights, garage doors and exterior doors. Asphalt shingles shall be designed for wind speeds in accordance with Section R905.2.6.

An excerpt of the code that addresses wind limitations.

## Elevator news

### Distribution of elevator annual operating notices has started

On June 1, 2008, the Department of Labor and Industry began to issue annual operating permits for all related elevator equipment. The fee for the operating permit is \$100 for each related device. All elevator-related equipment in operation throughout Minnesota must have a current operating permit if it is to remain in service.

Elevator equipment owners should receive notices throughout the next few months. In the event a notice for an elevator is not received, contact DLI to avoid

any untimely shutdown of elevator-related devices for failure to display a current operating permit.

If an owner has elevators located at multiple properties and wishes to pay in one lump sum for all units, they should contact DLI to make arrangements so duplicate notices will not be sent out in future years.

For more information about obtaining an operating permit visit [www.doli.state.mn.us/bc\\_elevators](http://www.doli.state.mn.us/bc_elevators) or call (651) 284-5846.

# New regulations for manufactured home installers are on the way

Code of Federal Regulations (CFR) 3285 is scheduled to take effect Oct. 20, 2008. CFR 3285 is a national standard for the installation of manufactured homes throughout the United States that requires every manufacturer and state to meet or exceed the minimum standard for manufactured home installations.

Homes manufactured after Oct. 20, 2008, must comply with the manufacturer's installation instructions or CFR 3285. The State Building Code (Minn. Rules Chapter 1350) currently requires that homes are to be installed in accordance with the manufacturer's installation instructions or Chapter 1350. CCLD's proposed amendment to 1350 will require the manufacturer's instruction manuals to comply with CFR 3285's minimum standards.

CFR 3286 — a national program for the administration, inspection, recordkeeping, tracking of installations, certification, education and training for manufactured home installers, inspectors and instructors — is scheduled to take effect sometime in 2009. CFR 3286 sets minimum program requirements for Department of Housing and Urban Development (HUD) and states in the administration of the national installation standards. 2008 Minnesota Laws, Chapter 337 (H.F. 3034) includes items that will allow amendment to Minn. Rules chapter 1350 for Minnesota to comply with CFR 3286 installation program requirements.

The CCLD's Manufactured Structures Section established a Manufactured Home Advisory Committee in 2003. The MHAC has completed its recommended changes to Minn. Rules chapter 1350 for compliance with CFR 3285 and CFR 3286 requirements. The proposed rules should publish sometime in September 2008 with an anticipated effective date of April 1, 2009.

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➤ *More information is online at*  
[www.doli.state.mn.us/bc\\_manufactured](http://www.doli.state.mn.us/bc_manufactured)



Some major changes that will affect installers of manufactured homes include a change in the length of time installation licenses are valid and the length of time installers must keep records.

### Some legislative items that passed in 2008 are:

- licensed installer license period changed from the current 1-year to a 3-year time period;
  - records of installation by installers and licensed dealer records will need to be retained a minimum of 5 years,
  - installation seals for the support and anchoring of homes will be one seal issued for every installation throughout Minnesota instead of the current two seals issued on homes;
  - the installation seal fee will change from \$8 for each seal (two required), to \$80 for each seal (one required);
  - installation certificates will contain more information about the installation of the home and the site conditions.
- [View list of 2008 legislative changes online](#)

### Some of the proposed code changes will be:

- inspection will be required of all installations of new homes and relocated homes by qualified inspectors (certified building inspectors and CCLD staff) throughout Minnesota;
- systems checks (gas, plumbing, electrical and mechanical) will be required of all completed installations prior to occupancy by consumer customers;
- continued education will be required for all licensed installers (12 hours) before every 3-year renewal of license;
- approval of all continued education programs for installers will be completed by CCLD.



## Maintain employees' welder qualification

Welding Procedure Specification (WPS), Procedure Qualification Record (PQR), and Welder/Welding Operator Performance Qualification (WPQ) are three important recordkeeping items when it comes to welding high-pressure piping.

All of these must be available to the HPP inspector for review at every location when fabricating or installing high-pressure piping in Minnesota. And while there are no expiration dates for the WPSs or PQRs, certain conditions do affect the validity of individual WPQs (see the list at right).

For more information, contact Todd Green via e-mail at [Todd.A.Green@state.mn.us](mailto:Todd.A.Green@state.mn.us).

### Continued from Page 9 - *Changes for installation of manufactured structures*

#### On-site completion

HUD will be publishing proposed changes to CFR 3282 in 2008. Changes proposed will be significant in what will be termed as "on-site completion" of manufactured homes.

Currently, CFR 3282.14, "alternative construction of manufactured homes," involves a process allowing the completion of a manufactured home at the site of occupancy.

The proposed rules would streamline

the process for completion of on-site items at the site of occupancy.

On-site completion has far exceeded what was envisioned in the original Act of 1976 when the HUD CFR Standards and Regulations for manufactured housing were first developed.

With new technologies and materials used in the manufactured housing industry in recent years, it has become necessary to change the process for on-site completion

and inspection of the final home prior to occupancy by consumers.

Now, manufactured homes commonly have features ranging from roof pitches that require on site completion to two-story manufactured homes with structural, mechanical, plumbing, and electrical connections requiring completion at site of occupancy. These types of features were not envisioned at the original writing of the standards and regulations that are now being changed by HUD.

### Top reasons a welder certification may become invalid:

- 1. No welder continuity log.** A WPQ expires if an individual has not welded in six months, using the process for which the worker is licensed. It is the employer's responsibility to keep a written record of this, and have it on the jobsite with the associated WPQ.
- 2. A WPQ is from a previous employer.** Too often inspectors are presented certifications signed by a different business. The HPP inspection unit will accept WPQ's from a previous employer as long as they follow the applicable sections of ASME B31.1 or ASME B31.5 codes. These require that the new employer obtain a copy of the WPQ and required continuity log(s). The WPQ will show the new employer's name and be signed and dated by the new employer thereby accepting responsibility for the qualifications performed by the worker.
- 3. Three-year expiration of WPQ used for ammonia refrigeration.** Under Minnesota Rules 5230.5925 subp.5, welder certifications expire three years from the original date of certification.
- 4. Questionable weld quality.** If there is reason to question the ability of a welder to perform sound welds via non destructive examination, the HPP inspector may require the individual to requalify before performing any more welds for use on HPP systems.

## Be mindful of exaggerated R-value claims

### ■ Benefits of reflective insulation are sometimes overstated by sellers

When reflective insulation is installed adjacent to open air or an air space within an assembly cavity it will improve the thermal performance of the construction assembly. Unfortunately, the way reflective insulation achieves this performance can be easily misunderstood which often leads to exaggerated thermal performance claims.

Uninformed marketers sometimes confuse discussions about performance by implying that radiation energy can pass right through shingles, siding, sheathing — even concrete. They and their potential customers can be easily misled by demonstrations of sunlamps shining directly onto reflective insulation.

The commonly understood “R-value” measurement takes into account heat flow through insulation by conduction, convection and radiation. For example, when testing the R-value of a fiberglass batt, heat is conducted along the fibers, through the air in the insulation, and radiated from one fiber to the next. The batt will have a high R-value if it does a good job of minimizing the amount of heat transferred by the fibers and radiation.



Some marketers are incorrectly touting the thermal performance of reflective insulation. (Photo by RIMA International)

Reflective insulation works in a similar way. Some heat will be conducted along the cavity edges, air convection within the cavity will transfer heat (there will be more or less convection depending upon the direction of heat flow), and radiation will transfer heat from the warm surface to the cooler surface. Reflective insulation works because the reflective surface has a low emittance, thus will allow only a small amount of radiation to take place.

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### Watch your figure

## Be careful when using Accessibility Code illustrations

The State Accessibility Code adopts the ANSI A117.1-2003 standard for accessible design.

This standard contains many helpful figures to illustrate the technical criteria of the standard. Through state amendment in Minnesota Rules, chapter 1341, some of the technical criteria have been modified in A117.1. Chapter 1341 does not contain

modifications to figures affected by the amended language. Therefore, some of the figures in A117.1 do not reflect the code requirement as shown in chapter 1341. Also note that ANSI Section 104.3 states that, “... figures included herein are provided for informational purposes only and are not considered part of the standard.”

This issue with the figures exists

in both the actual ANSI A117.1 standard as well as the Minnesota State Accessibility Code, Chapter 1341 document published jointly by ICC and AMBO. So be sure to watch your figure when using either document.

The DLI and ICC have made available the corrected figures at [http://www.doli.state.mn.us/bc\\_accessibility\\_helpful\\_information](http://www.doli.state.mn.us/bc_accessibility_helpful_information).

## New phone menu system in place to direct calls

To provide improved customer service to construction and code clients as well as the general public, the Construction Codes and Licensing Division has rolled out a new telephone menu system.

The upgraded system is menu-driven and requires users to listen carefully to the prompts to be quickly connected to the desired CCLD section.

The menu is broken down into the following sections:

- **Prompt No. 1** will connect callers directly to the licensing, enforcement, education, training and continuing education sections.
- **Prompt No. 2** is for plan review, inspection of state buildings, mobile homes or manufactured structures inquiries.
- **Prompt No. 3** will connect to the inspections sections, which include

electrical, high-pressure piping, boiler, plumbing and elevators.

- **Prompt No. 4** connects callers to CCLD's code interpretation and building code inquiry staff.

Callers may still use the existing direct-dial phone numbers to reach staff of CCLD. For questions about the new system, contact Peggi White via e-mail at [peggi.white@state.mn.us](mailto:peggi.white@state.mn.us).

## Continued from Page 11 - *Be wary of some exaggerated R-value claims*

Since 1979, the Federal Trade Commission has required manufacturers of thermal insulation to accurately and uniformly identify the R-value for all products intended for residential applications. The same R-values apply to non-residential applications. The tables below use the method prescribed for single sheet reflective insulation.

Effective emittance = 0.03  
(typical for bare aluminum foil products)

Air space	Zero	0.75-inch	3.5-inch
<b>Heat flow direction</b>			
Up	R-0	R-1.7	R-2.1
Horizontal	R-0	R-2.9	R-2.7
Down	R-0	R-3.8	R-9.6

Effective emittance = 0.10  
(typical for coated metalized film products such as mylar)

Air space	Zero	0.75-inch	3.5-inch
<b>Heat flow direction</b>			
Up	R-0	R-1.5	R-1.8
Horizontal	R-0	R-2.4	R-2.2
Down	R-0	R-3.0	R-6.0

Note that the bottom table for reflective insulations with higher emittance will permit more radiation heat flow, and will therefore have a lower R-value. When there is no air space between the reflective surface and a facing surface (as shown by the zero column of the chart), all the heat transfer is conductive and none is by radiation. Therefore there is no benefit for the reflective

surface. The reason that the direction of heat flow is so important is entirely due to convection. When the heat flow is down, warm air at the top of the cavity is stabilized and there is little or no heat transfer by convection. For other heat flow directions there is more convection - meaning more heat transfer and a lower R-value. This means the R-value may be significantly different in summer than in the winter.

A frequently advertised application for reflective insulation is promoted for use beneath slabs. The Reflective Insulation Manufacturers Association International publishes information on their Web site ([www.rimainternational.org](http://www.rimainternational.org)) citing the typical R-value for a single-layer, bubble-reflective insulation below slab system as R1.95 - due to the air space caused by the bubbles. Higher R-value claims could be substantiated with a different design of product or with additional air spaces in the assembly.

Reflective insulation is an effective product that will contribute to the R-value assembly when properly installed with the reflective surface adjacent to an air space. The product's FTC R-value fact sheet must correctly identify the actual R-value for the installation proposed and heat flow direction anticipated. For additional information about reflective and other insulation products call the Minnesota Energy Information Center at (651) 296-5175 or 1-800-657-3710.

## Be a part of the State Fair

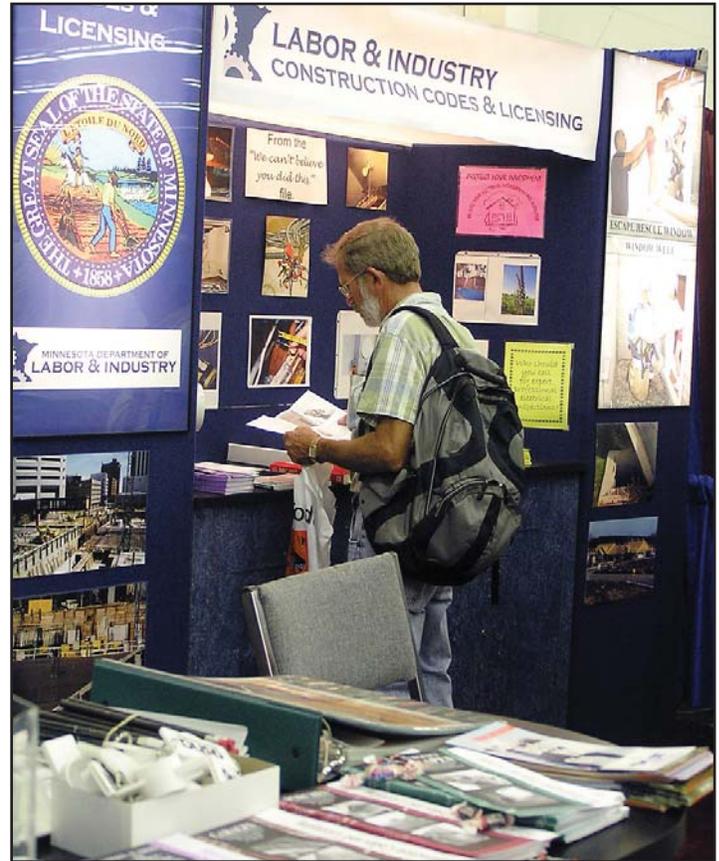
DLI's Construction Codes and Licensing Division will once again be participating at the 2008 Minnesota State Fair on August 21 through September 1.

CCLD staff and code enforcement volunteers will offer their code assistance to fairgoers at the CCLD booth and during the Governor's Fire Safety Day events.

The CCLD booth will be located in the Education Building and available for fairgoer access the duration of the fair. This is a great opportunity for building and electrical inspectors to show the importance of building regulations.

CCLD is currently recruiting volunteers to work morning or afternoon shifts during the fair. Each International Code Council chapter in Minnesota has been allocated time to represent its chapter and industry. If interested in volunteering during the fair, contact a local ICC Chapter or Kelly Denno via e-mail at [kelly.denno@state.mn.us](mailto:kelly.denno@state.mn.us) or by phone at (651) 284-5845.

CCLD staff and volunteers will also host the "Up, Out and Away" exhibit at the Governors Fire Safety Day on August 22 at the State Fair. The event is organized to educate children and their families about the importance of an emergency exit plan in the event of a fire. At "Up, Out and Away," children are taught how



DLI staff and code volunteers will once again be present at the Minnesota State Fair. For information about volunteering, contact a local ICC chapter or send an e-mail to [kelly.denno@state.mn.us](mailto:kelly.denno@state.mn.us).

to exit a room through an emergency escape window at the sound of a smoke alarm and then gather at a safe place to meet family members. Children who complete the exercise are rewarded with a grab bag that contains window safety information and treats.

## Whirlpool rules

# Bathtub standards will impact whirlpool installation

The Minnesota Plumbing Code (MPC), part 4715.1240 Subpart 2, requires that all whirlpool bathtubs and their installations comply with ASME/ANSI A112.19.7 and ASME/ANSI A112.19.8. The intent of these two standards at the time of adoption was to address health and safety concerns related to water retention in the recirculation system that could result in

contaminated water, protection from potential suction entrapment and hair entanglement and piping system construction requirements in whirlpool bathtubs.

There have been some changes to the MPC-referenced whirlpool bathtub standards which will impact the review and acceptance of these whirlpool bathtubs. The standards

development organization, American Society of Mechanical Engineer (ASME), has integrated the whirlpool bathtub requirements relating to the assessment of entrapment and hair entanglement in A112.19.8 into the latest edition of A112.19.7. Therefore, the latest edition of A112.19.7-2006, in its entirety, is a combination of both

**Continues on Page 14**

# Special inspection required for steel fabrication

## ■ Fabrication shops have ability to become ‘registered’ and ‘approved’

Because of the critical nature of some construction activities that are done away from a primary worksite, special inspections are often required.

One example is International Building Code section 1704.2 stating that where the fabrication of structural, load-bearing members and assemblies is being performed on the premises of the steel fabricator’s shop, special inspection of the fabricated items by an approved agency is required.

The exception to this requirement is when the fabricator’s shop is “registered” and “approved.” The most common resources for determining whether a steel fabricator’s shop is registered are those certifications by the International Accreditation Service, Inc. ([www.iasonline.org](http://www.iasonline.org)) or the American Institute of Steel Construction ([www.aisc.org](http://www.aisc.org)).

After review of the registration, the building official can approve the fabricator’s shop for the project. Many shops that supply steel members to projects in Minnesota are not registered and therefore special inspection of the members as they are fabricated in the shop is required.

The structural engineer of record should identify how compliance with this provision is met, and should be confirmed/approved by the building official as part of the plan review process.

The following is a standard plan review comment the Plan Review section of DLI’s Construction Codes and Licensing Division incorporates into the plan review report whenever documentation for steel members and assemblies has not been provided as part of the plan review submittal:

Special inspection shall be provided, in accordance with IBC Sec. 1704.2, for structural load-bearing members and assemblies where fabrication is being done on the premises of the fabricators shop. Special inspection is not required for fabricators registered and approved to perform such work without special inspection by an approved agency. Approval shall be based upon review of the fabricator’s written procedural and quality control manuals and periodic auditing of fabrication practices. Provide either documentation of approval or provide special inspection. [IBC Sec. 1704.2]

DLI’s policy is that substantiation of compliance is required prior to the issuance of the building permit.

## Continued from Page 13 - Review standards before whirlpool installation

prior code-required standards for whirlpool bathtubs.

As the intent of the requirement remains the same, DLI will accept the following as meeting Minnesota Rules, part 4715.1240, subpart 2, for whirlpool bathtub installation:

**1. Whirlpool bathtubs which meet and are listed to A112.19.7-2006, including pipeless whirlpool bathtubs.**

**2. Whirlpool bathtubs with**

**pressure sealed doors which meet and are listed to A112.19.15-2006, as Section 2.1 of this standard requires compliance with ALL the requirements of A112.19.7.**

These requirements apply to all whirlpool (hydromassage) bathtubs with a recirculating system with a pump, or air circulation, or both.

Also, if a shower spray is to be provided with the whirlpool bathtub, the spray must be equipped with an approved backflow preventer and an

anti-scald control valve complying with ASSE Standard 1016-96.

Prior to purchasing or installing any whirlpool bathtub, the owner/installer must verify that the whirlpool bathtub complies with the Minnesota Plumbing Code (Minnesota Rules, Chapter 4715).

It is recommended that an independent, accredited certification report be obtained from manufacturer for verification.

# Plumbing code requires anti-scald control valves

To protect bathers and prevent scalding from excessive water temperature due to sudden changes in pressure and water temperature in showers, the Minnesota Plumbing Code (MPC) requires that each individual shower be provided with an anti-scald type control valve in accordance with ASSE 1016-96. Minnesota Rules, part 4715.1380, subpart 5 states:

### Anti-scald devices

A shower or combination shower-bath in a new or remodeled installation must be equipped with an anti-scald type shower control valve. The valve must be of the thermostatic or pressure-balancing type in accordance with ANSI/ASSE Standard 1016-96.

The temperature of mixed water to multiple showers must be controlled by a master anti-scald type thermostatic blender, or the showers must be individually equipped with approved anti-scald type shower control valves.

As “anti-scald” is not specifically defined in the MPC, the Department of Labor and Industry’s Plumbing Unit has recently received some questions about this requirement as it relates to acceptable master anti-scald type thermostatic blenders for multiple shower applications



Plumbing code requires installation of anti-scald devices to protect bathers.

such as gang showers at schools, correctional facilities and shower buildings.

To provide clarification and to avoid incorrect installation or misapplication of the different master thermostatic mixing valves available, the following are examples of the use of the different types of anti-scald devices that will meet the minimum provisions of Minnesota Rules, part 4715.1380, subpart 5:

- A master anti-scald type

thermostatic blender meeting ANSI/ASSE 1069 may be installed where the bather has no access to temperature adjustment.

- A temperature mixing valve meeting ANSI/ASSE 1017 installed by itself is not acceptable. When used, all showers downstream of an ANSI/ASSE 1017 must also be provided with additional anti-scald type valves meeting ASSE 1016-96 or ASSE 1069.

For a gang-type shower installation, the temperature of mixed water to multiple showers must be controlled by a master anti scald type thermostatic blender — otherwise, the showers must be individually equipped with approved anti-scald type shower control valves meeting ANSI/ASSE Standard 1016-96.

As each shower valve is designed to its own standard with unique requirements and limitations, questions on the application of each standard may be directed to ASSE staff for an interpretation of each of the standards.

For additional information on whether a shower valve meets the MPC, contact DLI’s Plumbing Unit via e-mail at [DLI.Plumbing@state.mn.us](mailto:DLI.Plumbing@state.mn.us) or visit the [Contact Us](#) page for specific requests.

## Stay current on rules that affect CCLD industries

• Keep up-to-date with rulemaking and the Department of Labor and Industry. To review current rulemaking dockets, visit [www.doli.state.mn.us/rulemaking\\_activity](http://www.doli.state.mn.us/rulemaking_activity).

• View the Web sites for boards and councils that deal with CCLD trades at: [www.doli.state.mn.us/boards](http://www.doli.state.mn.us/boards). There, users can download agendas and minutes from past meetings.