

Code Update

By Gary S. Duren

Grease is the Word for ICC Code Modifications

Those of us born into the late 1950s and early 1960s were born into the “space age,” yet in 1959 more than 50 percent of the U.S. population still lived on independent family farms.

My maternal grandparents were among those farmers. I’ll never forget “Ma-Ma Loggins” reaction to “Pa-Pa Loggins” news that the privy was soon to be located inside the house.

She was totally against the idea, having been raised in the late 19th century when everyone understood the privy must be far away from the living quarters.

Still, in 1965, modern conveniences were installed indoors. Neither Ma-Ma nor her grandchildren would again have to brave the cold to get to the outhouse.

I mention this story because Ma-Ma Loggin’s first reaction to indoor plumbing is the typical knee-jerk reaction that many plumbing professionals have when faced with new and/or unfamiliar technologies. Our industry is often one of the slowest to embrace technological changes.

Of course, changes must be considered carefully. However, sufficient industry-wide safeguards are in place within the code and standards development arena to make it difficult for inferior technologies to enter the marketplace.

But now the plumbing industry is beginning to understand that change is inevitable and that contractors no longer can afford to resist innovation. In fact it’s beginning to understand that being one of the first to embrace a new technology can sometimes be very profitable.

Treatment receptacle changes

One notable national change is occurring under pressure from the Feds. States are beginning to take the subject of treatment receptacles very seriously.

The problem is ground water contamination from septic treatment systems. Many states have strengthened standards for in-ground pre-cast treatment receptacles — including grease interceptors — that deal with the structural integrity of the treatment receptacle in light of different soil saturation and/or water table heights.

There are code modifications at the International Code Council level to change the *International Plumbing Code* to include specific sizing formulations that apply to in-ground, precast grease interceptors. Similar code regulations have already been adopted in states such as Florida and Massachusetts.

That means costs for installing large precast interceptors will go up. We recommend that contractors check with their

state department of health; where specifications for treatment receptacles exist, they should install only DOH-approved precast interceptors.

We also believe that automatic grease removal devices will become more popular. Many municipalities are implementing pump-out and maintenance requirements that make the ongoing operating costs of maintaining in-ground interceptors increasingly prohibitive.

Here’s why

Problems with non-standard precast treatment receptacles occur in high-water-table/saturated soil that places hydrostatic pressure on the outside of the receptacle. Receptacles that do not meet American Concrete Institute-318 requirements for reinforcement, etc. will collapse upon pump-out from external pressure from saturated soil.

The second problem is more specific to grease interceptors.

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Many municipalities have been forced to update their sewer discharge ordinances to include tight pollutant discharge limits. The toughest limit we have seen for fats, oil and grease (fog) is 50ml/L. The federally recommended discharge limit for petroleum/mineral fog (such as gasoline, fuel oils and motor oils) is 100ml/L.

Animal/vegetable fog (meat fat, margarine, shortening, vegetable oils, cosmetics) is highly subject to biochemical degradation (treatment) by water reclamation facilities (WRF). It’s a “compatible” pollutant although it can solidify and block sewers. Yet EPA has never promulgated a national limit for it and takes the position that “pretreatment limits” should be developed on a case-by-case basis and should be based on the ability of a given WRF to remove this pollutant in the treatment processes.

Continued on page 16

July 2002

Code Update

Continued from page 14

Reviewing original publications on grease studies conducted in several cities we have started recommending a 250 to 400 mg/L “polar fog” limit. Generally all commercial users can achieve this limit on a consistent basis and generally such a limit protects the WRF from overloading.

To deal with fog, local authorities generally adopt a completely new “grease trap ordinance” containing all regulations pertaining to the particular program, or produce a “Grease Interceptor Policy” which is then referenced in an existing ordinance.

Our firm has developed a model sewer use ordinance, which contains the following measures:

Outline of a successful pretreatment program:

- I. Due to four basic premises, the public’s interest in the municipal sewer collection system must be protected.
 - A. Fog reduces the capacity of the municipal collection system over time by accumulating on the interior walls of the pipes.
 - B. Fog increases the pollution load that must be treated at the publicly funded treatment facility. This increases the cost of treatment.
 - C. The accumulation of fog within the municipal piping

system increases maintenance cost due to the need for sewer cleaning and physical removal at the treatment facility.

- D. Commercial food establishments have the greatest potential for introducing fog into the municipal collection and treatment facilities.

II. The greatest potential for introducing fog into the system arises from:

- A. Facilities preparing, processing, or serving food and/or food products.
- B. Commercial food preparation establishments: restaurants, nursing homes, hospitals, school cafeterias, supermarkets, etc.
- C. Industrial food preparation and/or processing establishments.
- D. Slaughter houses, food processing plants, fast food prep and frozen food manufacturers, etc.

III. The following steps must be undertaken by the restaurant and food preparation facility to control long term costs associated with maintenance problems resulting from fog in the municipal sewer collection system:

Continued on page 18

Code Update

Continued from page 16

- A. Must possess and maintain a properly sized grease removal system.
- B. Grease removal system already in place must be properly sized.
- C. An existing facility without a grease removal system must contact the city plumbing official and the director of public works and /or pretreatment manager.
- D. The plumbing official must notify the director's designee /pretreatment manager.
- E. The pretreatment department or department of public works director will start a sewer use/wastewater discharge permitting process.
- F. Existing facilities without a fog removal system will have up to 90 days to install a grease removal system.
- G. All applicable local plumbing/building codes shall be followed during the installation of the grease removal system.

IV. The following maintenance schematic must be followed by a facility meeting the criteria:

A. The outdoor in-ground grease interceptors system must be inspected weekly and pumped dry as needed or a minimum of once every 30 days. The under the sink grease recovery units (gru) must be inspected and cleaned daily.

B. More frequent cleaning may be required if discharge conditions warrant.

C. All maintenance records shall be kept on file at the facility for a period of three years and shall indicate the following:

1. Date of inspection.
2. Clean/pump out date and time of day.
3. Name of firm performing cleaning/pump-out.
4. Amount of grease removed or found during inspection.
5. Receipt and signature from firm performing pump-out with signature of facility owner/owner's agent.

V. Additives of any kind including bacteria, enzymes chemicals and emulsifiers are prohibited since their use seriously reduces fog removal system efficiency.

VI. Hot water flushing to clear a grease removal system shall be prohibited.

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About the Author

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