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REFRIGERATION AND AIR CONDITIONING TRADES ASSOCIATION - SOUTH INDIA

RATASI NEWSLETTER

NOVEMBER 2018 (ISSUE 3)

HVAC NEWS

**Launch of Dispute
Redressal Forum**

Technology Corner

**Future
Refrigerants**

From the President's Desk

Dear Readers,

It gives me immense pleasure to be part of the RATASI leadership team at a time when its members are most active and involved in all its activities. We thank our members for placing their trust on us and I'm confident that the new team of Office bearers and Executive Committee members are most capable to meet the member's expectations.

We also thank the previous leadership teams that have provided a very strong foundation and at the same time, set high standards of professionalism in the way that the association is managed. They have inspired us to try and exceed expectations wherever possible.

We have started the year on a high note with a successful seminar on Refrigerant gas safety and important updates in GST. With the support of our senior members, we were able to launch the Dispute Redressal Forum (DRF) to help our members in resolving business related disputes in an amicable manner.

We have further exciting projects and programs planned for our esteemed members in coming months. These programs are aimed to take advantage of our rich history and the strength of our unity to enrich our trade. We encourage our readers to become part of the growing RATASI family to benefit from such programs.



Pradeep Sekhani
President
Allied Sales India

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Edited & Compiled by :

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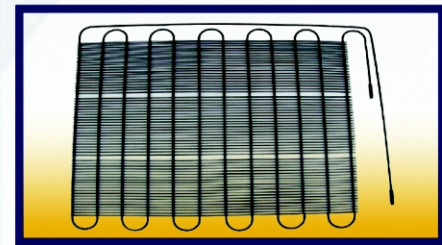
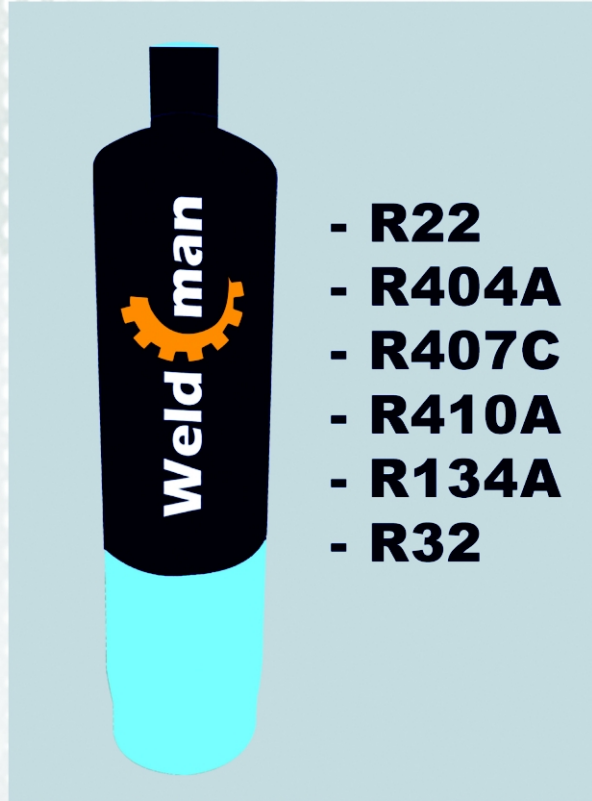
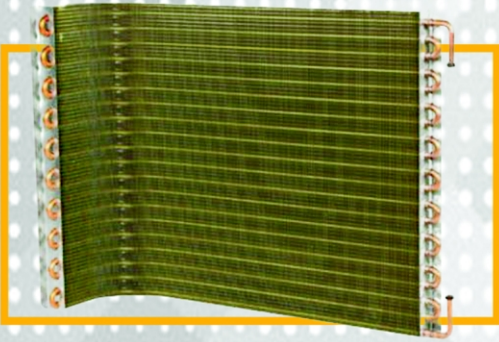
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TECHNOLOGY CORNER

CLASS 1 and Class 0 Insulations

Thermal insulation is used around copper pipes to prevent condensation issues from occurring. It is important to note that there are many different kinds of insulation - each unique for various purposes. The aspect of insulators that is usually compared is the thickness of the insulation, which provides a temperature gradient from the copper pipes to the surrounding air such that condensation is prevented. These insulators prevent heat loss via the process of conduction. Insulation is divided into two main classes, Class 1 and Class 0 with different fire-rated properties. Class 1 refers to the insulation having fire-resistant properties while Class 0 refers to insulation being very fire-retardant. For regular installations, Class 1 suffices.

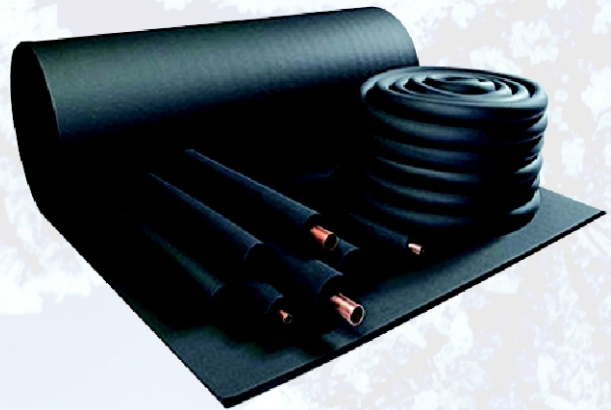
For medium to large scale projects, Class 0 insulation is preferred due to its fire retardant properties and FM approval. FM approval is the independent testing arm of international insurance carrier, FM Global. FM approval uses scientific research and testing to make sure products conform to the highest standards for safety and property loss prevention. Products that pass get the "FM APPROVED" mark. Insurance can be claimed on products that are FM approved, which is another reason for Class 0 insulation to be utilized by clients, contractors and consultants in medium to large scale projects.

Key features of Class 1 insulation -

- Class 1 fire classification according to BS 476 Part 7
- Reliable condensation/sweat control
- Easy to install
- Tough & flexible insulation
- Smooth powdered inner surface for easy installation
- Non-Corrosive on Copper pipes

Key features of Class 0 insulation -

- Prevents Condensation
- Class 0 Fire Performance
- Reduces Energy Losses
- No Vapour Barrier Required
- Low Thermal Conductivity
- FM Approved
- High Water Vapour Diffusion Resistance
- Completely Closed Cell Structure



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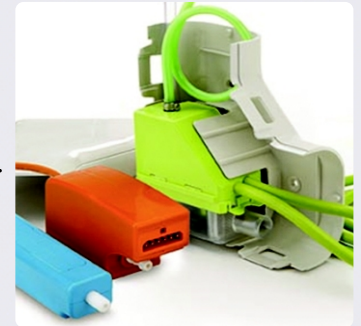
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What are Drain Pumps?

A **condensate pump** is a specific type of pump used to pump the condensate (drain water) produced in an HVAC system. HVAC systems that are able to use gravity/slope to flow the water that accumulates on the drain pan do not require the use of a drain pump. However, there are many cases where HVAC systems require the use of a drain pump to drain the water out and prevent from dripping into the space.

When and why you should consider using a drain pump -

- Lack of slope availability for drain water
- Slope is available but a beam is in the way which cannot be bypassed using gravity
- HVAC unit need not be placed at incorrect location due to unavailability of slope. Hence, no compromise
- Unit is placed in the basement and drain water has to be raised to ground level
- No chiseling of wall is required
- Allows you to mount a HVAC unit on a glass wall
- Helps protect false ceiling from water damages
- Allows contractors to address slope issues effectively and easily at site for a small cost.



Drain pumps can be used for the following applications -

Split or Hi wall units | Cassette units | Floor standing units | Fan coil units | Ductable units | AHU



Gas Safety and GST updates seminar

A technical seminar was held on 24th August, 2018 at Hotel Jalpaan, Greams Road, Chennai. A seminar on safety aspects of handling refrigerant gases was conducted by Mr. Mansoor Bhavnagarwala. Recent accidents and basic first aid were discussed for the benefit of members and staff. Later in the evening, Mr. C.A. Vinod Kothari took the members through recent changes in GST and also some of the changes expected to come in the near future. E way bills were also briefly touched upon.

Live testing of gas purity was also done for the benefit of members.

M.Rajasekaran

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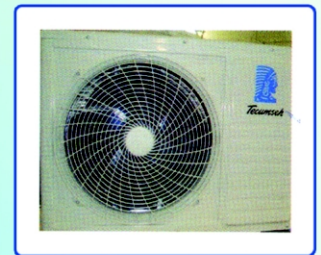
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THE BEST REFRIGERANT(S) IN THE NEAR FUTURE - A BILLION DOLLAR QUESTION

Refrigerants will always miss the targets of the scientist in one or the other way! And this is my observation since last 10 years of experience. Today in this article, I want to convey something regarding the best refrigerant(s) of the immediate future. As a person involved with the refrigerants, I have always wondered which is the best refrigerant for domestic Air Conditioners and refrigerators till date.

Year	Some of the gases that existed at that particular period
1800-1920's	During these years Ammonia (NH ₃), Methyl Chloride (CH ₂ Cl), and Sulfur Dioxide (SO ₂), CO ₂ and Hydrocarbons were some of the Refrigerants and we all know how dangerous some of the above gases can be.
1930s	In 1928, Freon was invented by Thomas Midgley and Charles Kettering. R11 and R12 had come.
1950s	R22 gas or Freon 22 as it is popularly called is one of the most popular gases one has seen in air conditioning history. This for me was one of the path breaking refrigerants (atleast in Indian Refrigeration industry) simply because it has stayed with us for almost 75 years.
1990- 2010	HFCs like R134a, R152a, R410a, R32 etc.
2010 -Today	HFOs and HFO Blends, CO ₂ , Hydrocarbons and Ammonia (NH ₃)

Trade off between “Flammability and Global Warming Potential (GWP)” can't be solved easily

Do you see some pattern in the above table?

Yes science has come to a full circle now from 1800 to 2018! Before 1930s, flammable or toxic refrigerants were used and the same is happening now in present new generation refrigerants. CO₂ as a refrigerant still exists. Gases which are toxic and flammable (NH₃) or extremely flammable (HCs) are back again with a vengeance in their original or modified form in refrigeration and air conditioning systems. Even some other mildly flammable refrigerants (HFOs & R32) also exist in new systems.

Also, we observe that from 1928 to 2018, we are moving towards flammable gases. R22 is non-flammable (1950s), R32 is mildly flammable (2010) and hydrocarbons are extremely flammable (today's generation Refrigerant). Seems like, more flammable the refrigerant, less global warming it causes. With flammable refrigerants (HFOs, R32 and Hydrocarbons) which world scientists are telling us to adopt for the sake of climate change there are other issues pertaining to refrigerant spare parts traders like storage issues (as we cannot store more than certain quantities without license from government) and transportation issues (as we cannot transport more than certain quantities without license from government in one vehicle) and of course if the flammable refrigerant leaks and fire accidents occur then such a refrigerant will lose its popularity. We have already seen some accidents with R32 gas. That means even though we are moving towards lesser ODP (Ozone Depleting Potential) and lesser GWP (Global Warming Potential) refrigerants but flammability is going to be a worry for us and when we go for non-flammable refrigerants then GWP is going to be a problem for us. This tradeoff is not solved by science since 200 years. As of now, HFO 1234yf is the future as far as Auto segment is concerned in Europe, Japan etc. HFO1234yf is mildly flammable and ignites at 405 ° C, emitting hydrogen fluoride (HF acid). R134a is still used in developing countries like India etc. As far as AC segment is concerned R410a and R32 is the better one in India as they have zero ODP. R32 has mild flammability, 675 GWP and high pressure problems. Also, when R32 decomposes at 570 °C it can release hydrogen fluoride (HF acid) which is extremely dangerous. Similarly, R410a has 2088 GWP and high pressure problems. There are some HFO blends that may come in air-conditioning segment as well.

Conclusion

Maybe we will use in far future (2035 maybe!) an air conditioning system which doesn't use refrigerants at all for cooling purpose. These kinds of systems do exist in the present world but how efficient they are would determine their existence. This would be a best solution if trade off between flammability and GWP is not solved quickly in future or maybe the humanity would have to compromise on flammability aspect for the sake of GWP and go ahead with mildly flammable refrigerants. A billion dollar question remains unanswered precisely as to what is the single best refrigerant each in domestic air conditioner segment and Auto segment! In my opinion, no refrigerant can ever come in near future which can satisfy all the requirements of non-flammability, non-toxicity, great efficiency, zero ODP and zero GWP but there is a silver lining - miracles do happen!

PavanSurana
Cool Max Enterprises

Do you know?

- Daikin is the only company in the world that manufactures refrigerants, Compressors and Air Conditioner.
- The largest refrigerator on the planet is a 27-kilometre section of the hadron Collider.
- The more the things packed into a refrigerator, the more efficient it becomes at keeping them cool.



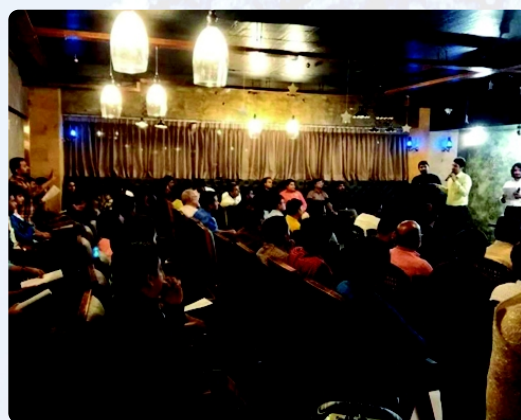
Launch of Dispute Redressal Forum

The Dispute Redressal Forum (DRF) was formed with the express aim of helping members in resolving business disputes in an amicable manner. Senior and well known members of the RATASI family have come forward to form the Forum with the best interest of Association in mind. RATASI members can approach the DRF for help in resolving any business related disputes they may have.

64th Annual General Meeting

The 64th Annual General Meeting of RATASI was held at Hotel 1947, Khader Nawaz Khan Road, Chennai on 14th July, 2018. We saw good attendance and also significant participation from members in matters of the association.

The new committee was formed with Mr. Pradeep Sekhani (Allied Sales India) appointed as President, Mr. Midhun Babu (Southern Coil Industries) appointed as Secretary and Mr. Vishnu Kumar (Cresco Refrigerants Pvt. Ltd.) as Treasurer for the current term.



EXHIBITION CALENDAR

EVENT	LOCATION	DATES
HVAC R Expo	Dubai	26 - 29 November, 2018
Asia Cold Chain Show	Bangkok, Thailand	28 - 30 November, 2018
ACREX	Mumbai, India	28 Feb - 2 March, 2019
HVACR Vietnam	Ho Chi Minh, Vietnam	27 - 29 March, 2019



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India to reduce cooling energy demand by 25% by 2038

India has become the first country in the world to develop a draft blueprint outlining an action plan to bring down cooling requirement and refrigerant demands across sectors by 20 per cent to 25 per cent by 2037-38 while slashing cooling energy requirements by 25 per cent to 40 per cent within the same period, said Union Environment Minister Dr Harsh Vardhan on World Ozone Day on Monday.

India's Achievements:

Played crucial role in adoption of Kigali Amendment to the Montreal Protocol for phase-down of Hydrofluorocarbons.

India has met its compliance targets under ongoing HCFC phase out.

Chlorofluorocarbons (CFCs), Carbontetrachloride (CTC), Halon and Methyl Bromide completely phased out from India.

On the occasion at an event, he released the draft India Cooling Action Plan (ICAP) and a booklet on 'Montreal Protocol India's Success Story'

He said that the Ministry has already undertaken an initiative for upskilling of 1,00,000 refrigeration and Air-Conditioning servicing technicians in collaboration with the Ministry of Skill Development and Entrepreneurship (MSDE) under Pradhan Mantri Kaushal Vikas Yojana (PMKVY) Skill India Mission.

India is the first country in the world to develop such a document (ICAP), which addresses cooling requirement across sectors and lists out actions which can help reduce the cooling demand.

Indian authorities commence cold chain project with Birmingham Energy Institute

Researchers from the University of Birmingham have commenced a partnership with the India-based Shakti Sustainable Energy Foundation focused on introducing more sustainable cooling to protect foodstocks in Haryana and Punjab.

The institution's Birmingham Energy Institute is helping devise a programme to determine viable clean cold initiatives for the country's food supply chain by looking at the types of technology and financing that may be required to tackle pressing issues affecting farmers.

India's government has committed to try and double farmer income by 2022 with a focus on improved productivity, according to Birmingham Energy Institute. Cold chains that can reduce post-harvest loss and ensure less energy intensive and costly transportation and storage is one possible means of achieving this aim.

Shakti Sustainable Energy Foundation chief executive Krishan Dhawan said, "By 2022, India is expected to see massive capacity addition in pack-houses, refrigeration vehicles and ripening chambers. Cold chains are expected to proliferate rapidly in the next few years through a combination of market and policy driven efforts."

Professor Toby Peters at the University of Birmingham said, "A seamless cold chain will reduce food loss to raise farmers' income and give them bigger markets, whilst expanding their selling range. But at the same time, it must be clean and sustainable cooling we must not replace a social crisis with an environmental catastrophe."



Bluestar aims to be USD 1 bn plus company in 5 years

Air-conditioner and commercial refrigeration major Blue Star is looking to further consolidate its position in the room air-conditioning segment as it aims to be USD 1 billion plus company in the next five years, said a top company official. The home-grown Bluestar, which on Thursday turned 75 years old, is also bullish on its growth outlook in the overseas market. The company has plans to expand its size in the water purifier market.



"We have a goal that in five years from now, we as an 80-year old company should have a turnover of Rs 8,000 crore (USD 1.1 billion). That is our internal goal to be a billion dollar company by FY 2024," Bluestar Joint Managing Director B Thiagarajan told.

In FY 2017-18, the Mumbai-based company had registered a revenue of Rs 4,433.34 crore. Bluestar is also in the process of fast indigenisation and backward integration. "Massive focus in the next 2-3 years would be on the backward integration as the trade barriers would continue to bother us," Thiagarajan said. Bluestar, which presently gets around Rs 600 crore from the international markets, has plans to increase the global contribution to around Rs 1,000 crore in the next three years.

On being asked about the government's decision to hike the basic customs duty (BCD) on compressors and AC units (fully imported), he said that this would impact the festive season sales. "This would be passed on to the consumers, prices would go up. Moreover, disposable income is down because the hike in fuel prices... Therefore, I am of the opinion that festival season demand would be impacted," Thiagarajan said. Established during World War II on September 27, 1943, by Mohan T Advani as a three-member team repairing and reconditioning air conditioners and refrigerators, Blue Star is a leading player in the AC and commercial refrigeration industry in India.

Samsung India bets big on system air-conditioner business

Electronics major Samsung India is expecting further growth in the system AC HVAC (heating, ventilation and air-conditioning) business over the next two-three years, director (system AC) of the company Vipin Agrawal said here Friday.



The company has several products under the portfolio, including air-conditioners equipped with wind-free technology, largest capacity VRF (variable refrigerant flow) outdoor unit with 30HP, 14HP side-discharge VRF outdoor unit and slim 1-way cassette.

"The market size for these products is about \$200 million. We are the fastest growing brand in the industry," Agrawal told reporters. To a query, he said, "The company is growing three to four times more than the industry. The industry is growing at about 10-15 percent".

Samsung has been registering a fast-paced growth in the system AC business with major contribution from residential (10 percent), commercial (10%) and educational institutions (15%), he said.

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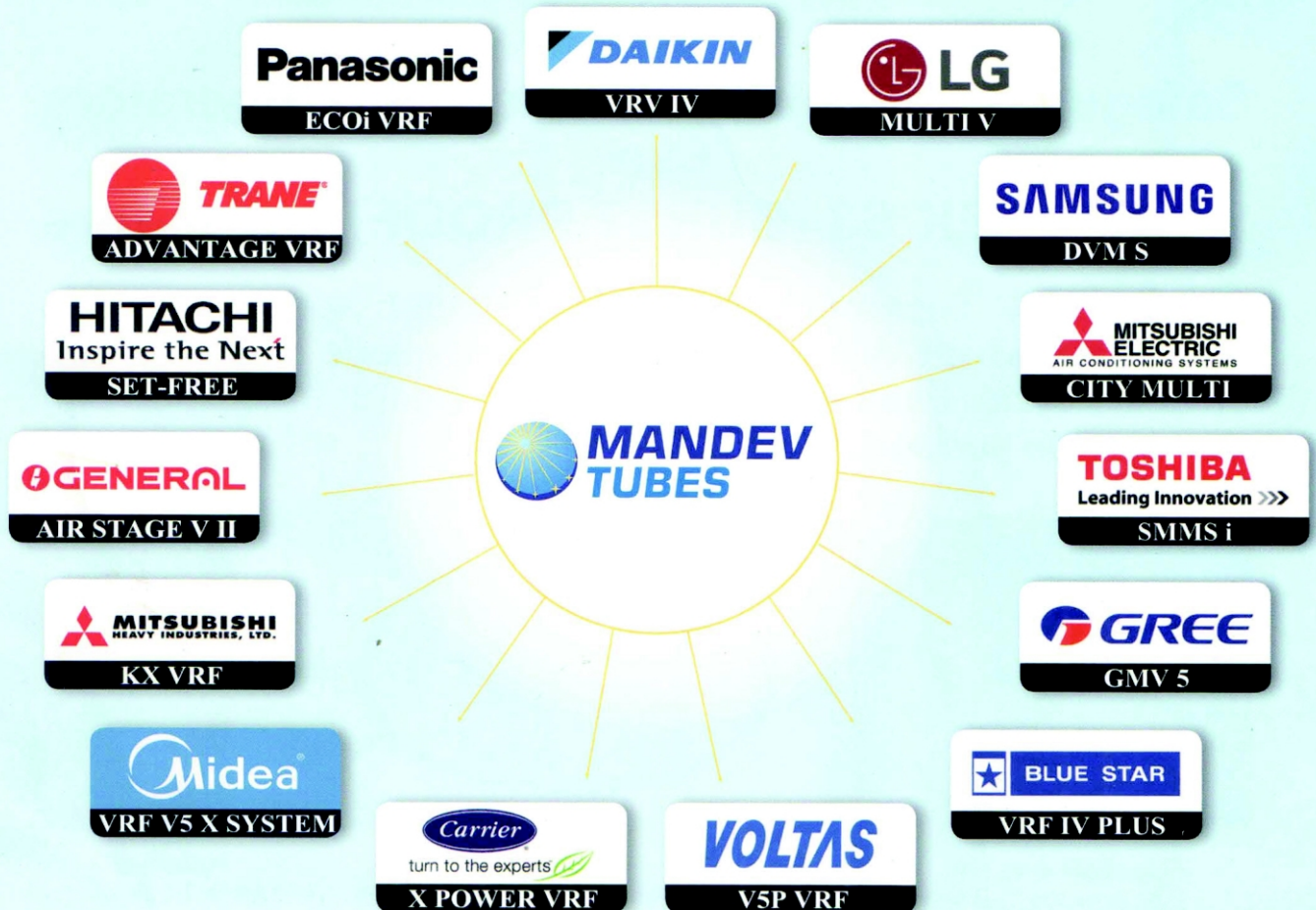
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