



The FSS Post

THE FIRE SAFETY & SECURITY POST

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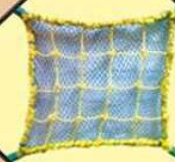


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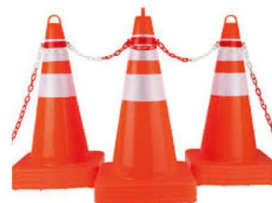
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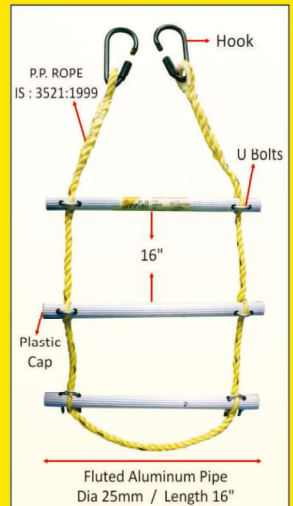
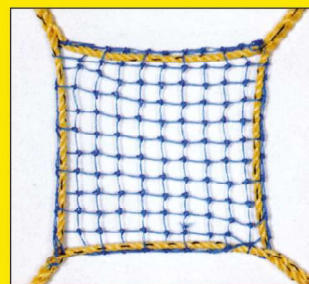
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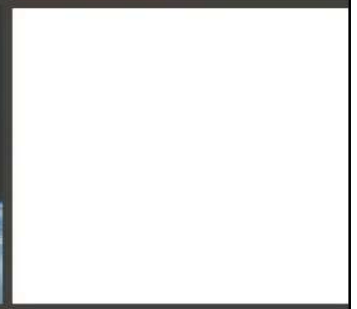
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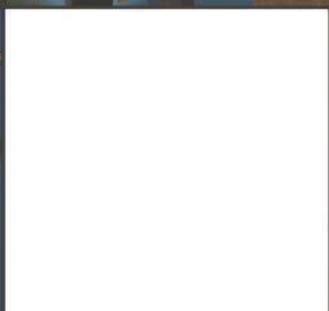


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MESSAGE *from* GUEST EDITOR



Dear Industry Friends,

Greetings !!!

As we turn the page on another financial year, fire safety stands at a critical intersection—where tradition meets innovation, and prevention must move faster than ever before. I'm honoured to serve as guest editor for this issue of *"The FSS Post"*, and to contribute to a conversation that continues to evolve with the times.

The foundations of fire protection—education, engineering, and enforcement—remain as relevant as ever. But today, we are being called to go beyond them. We are now in an era where lithium-ion battery fires challenge conventional suppression tactics, where wild land-urban interfaces blur the boundaries of responsibility, and where the climate itself has become a factor in fire risk planning.

This issue highlights the need for a new kind of readiness. One that's data-driven, cross-disciplinary, and above all, proactive. From innovations in AI-driven detection systems to the integration of fire-resistant materials in green architecture, the tools at our disposal are more advanced than ever before. Yet, as technology progresses, the human element—training, intuition, leadership—remains our most vital line of defence.

You'll hear from experts across the fire service, engineering, building codes, insurance, and public policy. Each voice adds a layer of insight into how we can foster a culture of safety that not only reacts to emergencies but prevents them altogether.

It's my hope that as you read this issue, you'll find inspiration, actionable ideas, and a renewed commitment to the mission we all share: saving lives and protecting communities.

Because in fire safety, every second counts—and every lesson, every innovation, and every conversation can make the difference.

Stay safe, stay sharp.

Ashish Shah

Director

Ambetronics Engineers Private Limited

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CONTENT

Edition Highlights

ARTICLE



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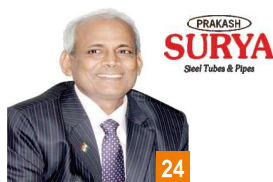
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IN CONVERSATION WITH



"PADMA SHRI"
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Chairman
Surya Roshni Ltd.



IN FOCUS



D.P. Parekh
Director
Fire Safety Devices Pvt. Ltd.

CURRENT UPDATES



Transformer Blast led to fire break out at AIIMS Delhi, Fire Tenders on the spot



Two Dead in the Fire Incident in "Vishal Mega Mart" at Karol Bagh, New Delhi



THE FSS POST

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ADVERTISERS INDEX

Aktion Safety Solutions Pvt. Ltd.	Front Inside Cover
Ambetronics Engineers Pvt. Ltd.	11
Brijbasi Fire Safety Systems Pvt. Ltd.	61
Deworth	57
DV Enterprises	47
Fire Chem	Back Cover
Free Fall Safety Industries	9
Gaby Fire Protection Industries Pvt. Ltd.	58
Karemate	2
LPCB	13
NewAge Fire Fighting Co. Ltd.	2
Fire Safety & Security Trade Show	36
Pravina Enterprises	19
Prolite Auto Glow	4
Reflacto Safe	7
Safety Experts	8
Surbhi Fire Door	6
Surya Roshni Ltd.	Back Inside Cover
Three S Instrument Pvt. Ltd.	1
UMC	14,15
Unicare	10
Unistar	17, 41, 65
Kartik Fire Protection Pvt. Ltd.	44



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Mr. Dhiren Parekh
Director
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“We have strong presence in the international market. We are pleased to share that our product range has been accepted with wide open arms internationally because of its quality. Today we are supplying to 45 countries. That means we have our trade relations to almost all parts of the globe. We are supplying to South East Asia, Gulf Countries, South Africa & South America to name a few.”

Q: “Firechem” is well established brand in fire safety business, how have you made it possible?

Branding is a continuous process. It is not established in a day. We have put a lot of hard work and methodical approach. One requires persistence and patience to establish a brand.

First and foremost, continuously producing and supplying quality products. It takes time for acceptance and builds trust among the customers, but when it is built they reciprocate with zeal.

Branding is also coupled with marketing communication strategies. We give advertisements to related print media, take part in many exhibitions, use online platform to customer to know about our products & its quality. Consistent approach with patience gradually creates a brand.

Q: What product range do you offer to fire market?

We have been supplying all types of Fire Fighting Chemicals such as AFFF, Dry Chemical Powder, and Wetting Agents to name a few.

We are now offering “Firechem” fire extinguishers also.

Q: In which all countries are you exporting?

We have strong presence in the international market. We are pleased to share that our product range has been accepted with wide open arms internationally because of its quality.

Today we are supplying to 45 countries. That means we have our trade relations to almost all parts of the globe. We are supplying to South East Asia, Gulf Countries, South Africa & South America to name a few.

Q: What quality check measures do you take to ensure best quality product?

We are very cautious about the quality of our products. As you are aware that quality protects life and property.

To ensure the quality we have established a in house laboratory to check each batch that is produced. Moreover, our products are BIS, EN & UL compliant. These are the best standard codes which are available today. So the acquired certifications are itself is a statement to our quality.

Q: Post pandemic how market is reviving?

Pandemic was scary. Businesses were at rest. Entire world was confined without any activity, be it business or otherwise. Everything was in nebula.

But post pandemic under the leadership of Honorable PM Mr. Narendra Modi, government has tackled the situation effectively. Industries & infrastructure projects not only started but speeded up well. That has encouraged the market activities. So is fire business. In nut shell I can say business is reviving well.

Q: Our government has taken many steps for economic improvement, what advantages fire industry has received?

We must congratulate our government for their effectiveness in combating Covid disaster. Not only indigenous vaccine was produced but also vaccination drive was very efficient and smooth. Apart from that government helped businesses to come in shape.

Every business is interlinked. When all businesses started and gained momentum, our set of business also revived well.

Q: What growth do you expect for the fire industry in coming five years?

We expect fire business with 20-25% growth prospects in coming five years.

Q: If someone likes to be your channel partner, how is that possible & what is an eligibility criterion?

We welcome if someone likes to be our channel partner. One should have zeal to grow with us. One has to be target oriented to grow business. That is the only criterion.

Q: As a manufacturer what support will you render to establish your channel partner?

We can ensure best quality of products that will help him to develop his market with recurrent demand. We will provide proper training about our product range so that we can avail business prospects. Timely delivery is assured. Also our brand support will help him to fetch business.

A lot of brand promotion activities we do as mentioned. The channel partner will also reap the benefits of that as well. In less effort one may generate business & profits.

Q: In past one decade what perception change have you felt for Indian fire manufacturers on the international canvas?

As told to you earlier we are exporting to 45 countries. We have an impression that the credibility for the Indian manufacturers has improved a lot. The capabilities of Indian manufactures are acknowledged are recognized. Today international buyers take us as their trusted partners.

Q: Kindly give message for the readers?

Our stint in business has given many teachings, time and again. But the most important learning we can share is that hard work & honesty have no substitute. It has to be mingled with faith in yourself. Persistence & patience are necessary additives with honesty & hard work. It will fetch results for sure.





Transformer Blast Led To Fire Break Out At Aiims Delhi, Fire Tenders On The Spot

Delhi, AIIMS: After a blast in an electric transformer near to AIIMS Trauma Centre in Delhi caused panic.

Electric Transformer of 33,000 volt situated near to Trauma Centre premises. The transformer caught fire and flames erupted from it. Had the flames spread the situation could have been turned into nightmare. Doctors' hostel is nearby to the incident area.

The call was made to fire department around 3:35 pm., immediately eight fire tenders were pressed at the sight of incident and fire-fighters swiftly controlled the fire securing the entire area. The fire was brought under control within 30-35 minutes.

Adding to the danger hundreds of patients were present there for treatment at AIIMS Trauma Centre.

The prompt action of fire department is worth appreciable. Services of the hospital were not disrupted. Patients were kept safe during the combat and hustle-bustle was reported.

Fire department has initiated investigation to ascertain the cause of fire. Preliminary, short circuit is suspected as the cause of incident.

The situation is fully under control and no casualty has been reported.



"PADMA SHRI"
MR. JAI PRAKASH AGARWAL
Chairman
Surya Roshni Ltd.



Robust Growth: "Surya Roshni" Registers Over INR 8,000 Crore Sales in FY 2023-24

"Surya Roshni, an Indian conglomerate, is among the oldest and largest pipe manufacturers in the country having a diverse product range, to meet all kinds of applications. Surya, being one of the largest exporters of pipes from India, with a formidable domestic presence, partners with its customers to provide optimized solutions. Surya supplies world-class quality pipes at competitive prices making it the preferred choice of its customers. The company has continued its upward trend in the growth trajectory and registered sales of around INR 8,000 crore in FY 2023-24. This was revealed by "Padma Shri Jai Prakash Agarwal", Chairman - Surya Roshni Limited, during his recent interaction with "The FSS Post".

Please share Surya Roshni Limited's journey, major milestones, and crucial achievements.

Jai Prakash Agarwal (JPA): The journey of Surya Roshni started in 1973 by manufacturing steel tubes and gradually diversifying into the lighting category in 1984. Since then, it has grown by leaps and bounds to become one of the largest steel pipes and lighting companies in India. It further ventured into PVC pipes in 2010 and into consumer durables like fans and home appliances in 2014-2015. Today, we are the leading manufacturer of GI pipes and one of the largest exporters of ERW pipes in India. Surya exports its high-quality products to over 50 countries around the world. The company registered sales of around INR 8,000 crore in the last FY.

What is the manufacturing set-up and production capacity of your steel pipe plant?

JPA: Our steel pipes manufacturing facilities are located at Bahadurgarh (Haryana), Malanpur (Madhya Pradesh), Hindupur (Andhra Pradesh) and Anjar (Gujarat). The pipes are produced for

various applications including water, structural and also oil & gas. We produce ERW round pipe from ½" to 16", spiral welded pipe from 18" to 140", and ERW section pipes from 20x20mm up to 300x300mm. We produce GI pipes from ½" to 30" and also GP pipes. We also carry out 3LPE coating at our Anjar facility.

Our plants are suitably equipped with high-end machines ranging from slitting lines, pipe mills, galvanizing units, finishing machines, as well as high-pressure hydro machines along with adequate handling facilities. The Gujarat unit is strategically located in close proximity to two major ports, Kandla and Mundra, providing a significant advantage for exports and imports. The unit exports over half of its production. We are equipped with large-diameter section pipe facility at Gwalior, utilising Direct Forming Technology (DFT) with an annual capacity of 36,000 MT. We have a combined capacity of about 12.15 lakh MT (1.215 million MT) per annum for steel pipes and strips out of which we can produce upto 3 lakh MT of GI pipes.

Please tell us about your steel pipe product portfolio and its applications.

JPA: Our product portfolio includes GI pipes with applications for agriculture & irrigation, casing and tubing, water transportation, plumbing, cold storage, greenhouses, fire fighting, last mile connectivity of PNG, street light poles, and solar panels to name a few. Black/varnished/powder-coated pipes are used in applications for construction, fabrication, fencing, metro railway platforms, airports, sign boards, industrial, and scaffolding among other applications. Our hollow section pipes find applications for infrastructure and PEB structure of commercial buildings like airports, metro/railway stations, warehousing, industrial infrastructure, urban development, solar structures, electrical poles, telecom towers etc. API/3LPE coated spiral pipes are used for oil and gas pipelines, oil well casing and water transportation.

Please shed light on your steel pipe market footprint.

JPA: Surya has built an exceptional reputation in both the Indian and global markets due to its diverse product range, commitment to quality, and excellent service all offered at competitive prices. Our brand has gained the trust of millions of customers worldwide, and we remain dedicated to delivering superior products while adhering to the strictest global quality standards. Surya stands as a brand image that is synonymous with high-quality products delivering consistent performance and peace of mind. It is because of this trust of our esteemed clients that Surya today has a significant presence in more than 50 countries and is among the top three pipe exporters.

What is your USP that sets you apart from your competitors?

JPA: Our commitment to quality assurance begins from the raw material stage and continues throughout all manufacturing processes until the pipes reach our esteemed clients. To ensure the highest quality, our quality assurance department is fully supported by a modern laboratory for conducting metallurgical and chemical tests, as well as a test house for evaluating physical properties. One of our key strengths lies in producing large-diameter pipes, ranging from 114.3mm to 406.4mm in ERW and 457mm to 2667mm in spiral pipes. Our expertise extends to manufacturing various special grades, including API 5L grades such as X70, X80 in PSL 1 & PSL 2, and API 5CT grades H40, J55, K55.

What is your steel pipe technological and business roadmap?

JPA: We have a constant focus on technologically upgrading ourselves with an objective to make our processes cost effective, improve productivity and provide more consistent quality. Surya recently introduced the best-in-class direct forming technology (DFT) to produce ERW structural steel section pipe. This technology significantly reduces the time of producing customized hollow sections by including them in the mill range without changing the roll. Being a completely automatic and computerized process, DFT saves the setup time and makes operation settings accurate, easy, and efficient. Compared to traditional production processes, this method is completely automatic and computerized, with all PLC control with a DC digital control system only to motorize the roller movement during the size changes. Surya is taking big strides in its chosen areas with tested skills, commitment, a skilled workforce, vast experience, and mature leadership.

Please elaborate on your capex investments for new ERW pipe mills at existing facilities.

JPA: To meet the growing demand of pipes, we have decided to expand our operations at various locations. This expansion will not only enhance our capability to handle larger pipe sizes but also enable us to strengthen our presence in the oil and gas markets, increase our exports, and cater to local irrigation and water distribution projects. We are in the process of installing a new spiral welding line at Malanpur for producing pipes from 24" to 140" at an investment of around INR 25 crore. Another new mill is commissioned for producing pipes up to 8". The proposed manufacturing facility will have a capacity of 200,000 MTPA, with an estimated cost of INR 50 crore. This strategic move will position us to better serve our customers and expand our market reach, contributing to the growth and success of our company.

Surya Roshni has recently invested in its Prakash Surya brand and distribution networks. Can you share in detail all the steps that you have taken?

JPA: Over the years, the company has developed a strong brand and robust distribution network across the world. Our investments towards strengthening distribution (including trade network and retail outlets) and decentralized depot networks ensure smooth logistics movement, prompt delivery, and customer satisfaction, aptly supported by strong marketing initiatives. The company has been consistently promoting its brand 'Prakash Surya' through different advertising mediums for enhanced market visibility. Our products are sold across the length and breadth of the country and exported to over 50 nations across the world, owing to our strong

dealer and distributor network. Besides, the decentralized branch/depot networks help with the quick delivery turnaround to customers.

Have there been any other developments at Surya Roshni in recent times?

JPA: The company recently implemented SAP software to integrate and automate key processes, resulting in faster and more efficient operations. As a responsible corporate citizen, Surya Roshni aims to assist in promoting social development by building capacity within the broader society. The company considers societal well-being and ecological responsibilities as the key focus area for its ESG initiatives. We are continuing with the high growth momentum in lighting, consumer durables, steel, and PVC pipe by focussing on further improving the distribution and reach, across urban, semi-urban, and rural India. There will be several new product launches and the company will continue to aggressively drive channel financing too. We will also continue to invest in automation and upgradation of systems to drive higher efficiencies and productivity. Surya Roshni is focusing on aggressive advertising and promotions (including both above-the-line and below-the-line advertising) to enhance its brand visibility.

Can you share with us your observations on key market trends in the Indian tubes and pipes market?

JPA: There is a high demand for steel pipe in various sectors with strong improvement in the Indian economy, including rural and urban. The industry opportunity has been so exciting considering the following encouraging developments which will generate demand for our steel pipes and strips business. The Indian economy showed resolute strength during the period with the government's stance for Atmanirbhar Bharat, which has opened new avenues with immense hidden opportunities to explore in making India a global manufacturing hub in the medium to long term. Prime Minister's initiative of Jal Jeevan Mission has given a huge impetus to pipe industry. The latest trend in the construction industry is to construct PEB buildings with extensive usage of hollow sections. Hollow sections provide a benefit of strength while reducing the overall weight of the structure. With huge

investments made in housing, and infrastructure like railways, ports, roads, airports, etc., demand for steel pipes is reaching a new level and more will be anticipated in time to come. The focus on green energy will create new opportunities for Hydrogen pipelines.

What is your vision and plans for the company's future?

JPA: Our vision is to become the most preferred brand of pipe and lighting products manufacturer in the country which delivers the best value to its customers worldwide. We are fully committed to satisfaction and growth of all our stakeholders, and employees alike. We carefully assess growth opportunities not only to improve top-line revenue but, more importantly, to ensure consistency and enhance our bottom line as well. We are continuing with the high growth momentum in lighting, consumer durables, steel, and PVC pipe by focusing on further improving the distribution and reach across urban, semi-urban, and rural India. There will be several new product launches and the company will continue to aggressively drive channel financing too.

Kindly share your views on trade fairs. How do you think such events help the industry?

JPA: We believe trade fairs are a great way to meet people, revive old connections and make new ones. They can be called a versatile marketing tool as they bring together the whole industry, including the manufacturers, suppliers, buyers and traders under one roof, thus giving every stake holder a good opportunity to connect with the best and make their business known. Besides giving recognition to a company, these fairs also enable businesses to analyze themselves, as well as prepare to sell products and services in a competitive environment. They can also be used as market research instruments to know customer needs and feedback for new product launches.





Contributed by:

Ashish Shah

Director

Ambetronics Engineers Private Limited



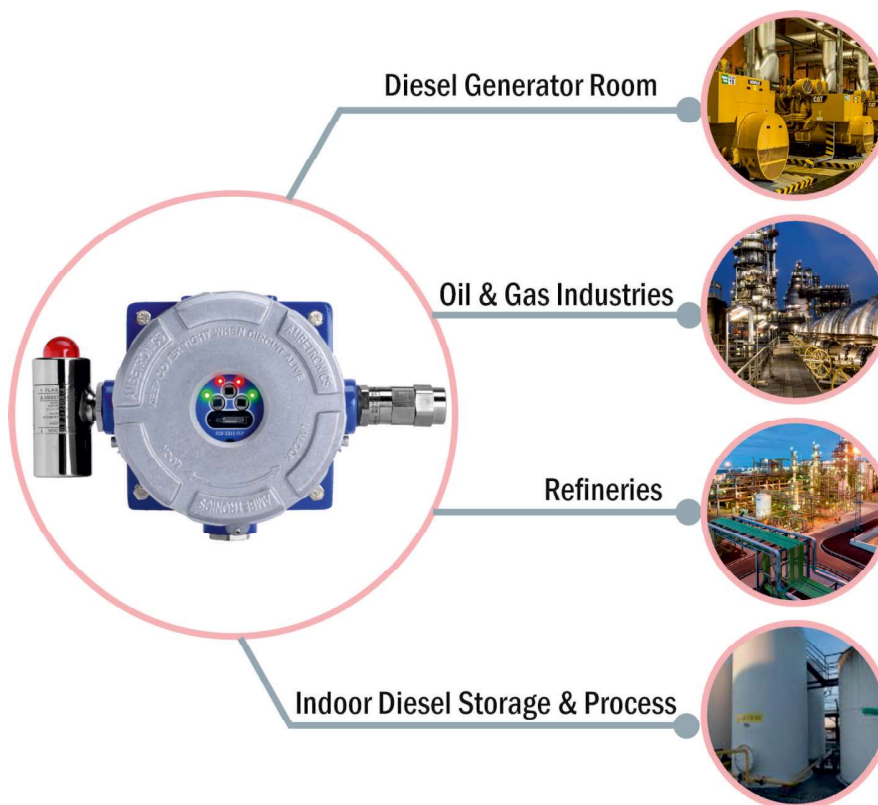
“Guardians of Safety: The Vital Role of Flame Detectors in Industrial Environments”

In the realm of industrial safety, where risk mitigation stands as a paramount concern, flame detectors emerge as indispensable guardians against potential catastrophes. A flame detector is a sophisticated device engineered to swiftly detect the presence of flames in hazardous environments, thus enabling rapid response to fire incidents.

The importance of flame detectors cannot be overstated, particularly in industries where the slightest ignition can lead to devastating consequences. These devices serve as vigilant

sentinels, tirelessly scanning their surroundings for the telltale signs of flames, ensuring early detection and timely intervention to avert disasters.

At the heart of a flame detector lies its intricate mechanism of operation, which typically involves the utilization of multiple sensors, including ultraviolet (UV) and infrared (IR) sensors. These sensors possess the remarkable ability to discern the unique spectral signatures emitted by flames, thereby distinguishing them from other sources of light.

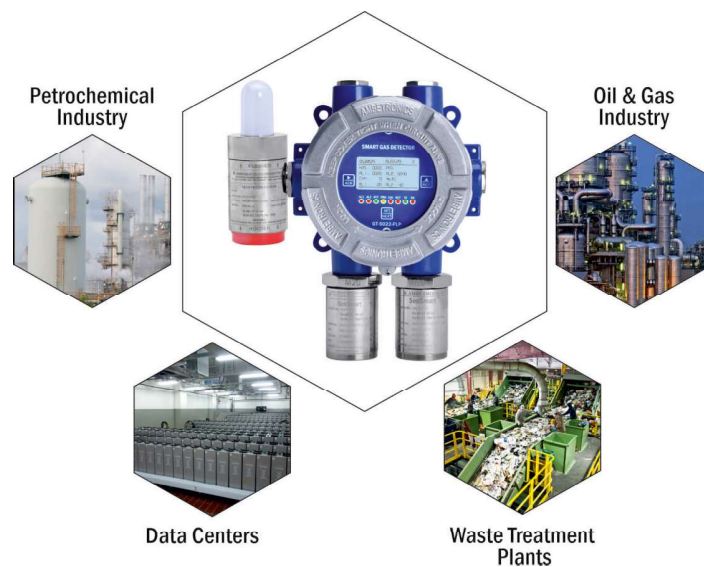


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Safety Leadership: Nurturing a Culture of Well-being & Excellence



Wg. Commander
Dr. Rakesh Parashar
Safety Expert & Trainer

An organisation comprises individuals from diverse cultural backgrounds, each of who bring their own unique perspectives, values, skills, experience, and talent to the workplace. While this diversity ensures a dynamic, enriching, and multifaceted environment in the workplace, this can also lead to varied interpretations and understandings, impacting workplace safety.

In this setting, leaders play a very important role in guiding, directing, and influencing the organisation to achieve its goals by making strategic decisions, managing resources, and ensuring overall success of the organisation.

While leaders in an organisational context are tasked with guiding the company's overall direction and achieving diverse business goals, such as revenue growth, customer satisfaction, market expansion, operational efficiency, risk management, innovation, and brand building, among others, their primary emphasis on the 'Three Ps' — 'Productivity,' 'Profits,' and 'Profitability' — can occasionally lead to a diversion of focus from the critical aspect of safety in pursuit of business objectives. This is where the role of 'Safety leaders' becomes paramount.

Safety leaders play an extremely important role in the workplace, as they are dedicated to ensuring a safe working environment and ensuring that safety remains a paramount priority alongside business goals.

Architects of organisational success:

While both 'Leaders' and 'Safety Leaders' play a crucial role in shaping the success of an organisation, their roles are uniquely different. It is therefore imperative to understand the distinct responsibilities that set them apart.

1. While a leader assumes the primary responsibility for formulating strategic decisions related to operations, market strategies, and financial performance, safety leaders dedicate their focus to establishing and preserving a safe working environment for the employees.
2. In the pursuit of overall business objectives, a leader charts the course by setting goals, allocating resources, and guiding the team. Conversely, safety leaders direct their efforts towards minimising accidents, injuries, and occupational hazards, placing paramount importance on the well-being of employees.
3. In the organisational context, decision-making encompasses leaders addressing diverse aspects including finance, marketing, and operations. In contrast, safety leaders centre their decision-making on safety protocols, training initiatives, and emergency response planning.

4. While a leader communicates broadly about the organisation's vision, goals, and strategies, a safety leader places a distinct emphasis on communicating policies, procedures, and emergency protocols related to safety.

5. The success of a leader is measured by financial performance, market share, and overall business growth, whereas the success of a safety leader is gauged by the reduction of accidents, injuries, and the establishment of a robust safety culture.

6. A leader's expertise encompasses various business disciplines like management, finance, and marketing, while a safety leader requires specialised knowledge in safety regulations, risk assessment, and emergency response procedures.

7. A leader focuses on fostering comprehensive employee satisfaction and engagement in organisational initiatives to ensure the success of its objectives, while a safety leader prioritises effective employee engagement in health and safety activities, to ensure the accomplishment of safety objectives.

8. While a leader ensures compliance with various business laws and regulations to safeguard business interests, a safety leader ensures adherence to safety regulations and standards to safeguard the well-being of employees.

9. Most importantly, while 'Leadership' typically refers to individuals in managerial or executive roles, who hold formal positions of authority within the organisational hierarchy, 'Safety Leadership', extends beyond formal authority, recognising the capacity of every member to influence the safety culture through their attitudes, behaviours, and commitment. This entails not only adherence to safety protocols but also active promotion and enforcement, to prevent workplace accidents, injuries, and hazards. Safety leaders thus promote safety as a collective responsibility, where personnel at all levels, play a vital role in fostering a culture of safety within the organisation.

Both leaders and safety leaders contribute to the organisation's success in different, yet complementary ways. Recognising their distinct roles within an organisation is crucial to understanding their impact on overall success.

While leaders focus on strategic business goals to enhance productivity and profitability, safety leaders are committed to creating and maintaining a safe working environment, indirectly contributing to enhanced productivity and profitability. Seamless integration between both, ensures that employees operate in a

conducive environment, leading to improved morale, heightened job satisfaction and reduced absenteeism caused due to injuries. This collaborative effort contributes synergistically to increased productivity, improved profitability, and sustained organisational growth.

The crucial role of safety leadership in organisational well-being

Safety leadership is critically important for organisations as it plays a key role in ensuring the well-being of employees and contributing to the overall success and sustainability of the business. While Safety leaders are not directly responsible for achievement of business goals, they play a pivotal role in ensuring the same.

Some key facets illustrating the significance and benefits of safety leadership for an organisation include:

Employee well-being and morale:

By prioritizing employee health and safety, safety leaders create a work environment that values their well-being. This not only fosters a culture of care, but also helps prevent workplace accidents. This commitment ensures employees return home to their loved ones, in the same condition that they came to work, promoting job satisfaction and improved morale. A safe environment not only instills confidence but also builds trust and loyalty, contributing to an engaged and positive organisational culture.

Reduced absenteeism:

Committed employees means, lower rates of absenteeism, either due to accidents or otherwise. Reduced absenteeism ensures that the workforce remains consistently present and productive.

Enhanced productivity:

Safety leaders emphasise the importance of preventive measures and hazard identification, resulting in fewer disruptions caused by accidents or injuries. This environment ensures that employee focus on their tasks without concerns about their well-being, fostering increased employee engagement in safety. This not only boosts employee productivity and efficiency, but also positively impacts overall organisational performance, recognising that a motivated and engaged workforce is inherently more productive.

Reduced accidents and costs:

Safety leaders pro-actively implement and enforce robust safety protocols preventing workplace accidents, injuries and illnesses. This minimises disruptions caused by accidents, reduces downtime, and ensures continuous productivity, which translates to lower costs associated with medical expenses, workers' compensation claims, potential legal liabilities and even insurance claims. These savings positively impact the organisation's bottom line.

Positive organisational reputation:

Safety leadership contributes to an enhanced organisational reputation and brand image in the industry as it signals a commitment to ethical practices and employee welfare. A strong safety track record, not only helps organisations build a positive reputation, but also contributes to increased trust among clients, customers, business partners and all stakeholders. This reputation helps attract additional business opportunities - both nationally, as well as internationally.

Employee retention and talent acquisition:

A commitment to safety and a strong safety culture in an organisation, not only contributes to higher job satisfaction, but also reduces employee attrition, which promotes talent retention. While employees are more inclined to stay in an organisation which prioritises their well-being, these organisations also attract top-tier talent. This aids in talent acquisition fostering a skilled and motivated workforce, that positively influences overall business performance.

Legal Compliance:

Safety leaders ensure adherence to safety regulations and standards. This not only safeguards the organisation's reputation by helping avoid legal repercussions, financial penalties and sanctions, but also demonstrates a commitment to ethical and responsible business practices.

Innovation and creativity:

The psychological safety provided by effective safety leadership nurtures a culture of experimentation and learning. A safe workplace fosters an environment where employees feel secure to contribute innovative ideas and creative solutions.

Improved efficiency:

Safety leaders often identify and address potential hazards that could impact operational efficiency. By optimizing processes for safety, they indirectly contribute to smoother operations, minimising errors and enhancing overall efficiency.

Long-term organisational success:

Safety leadership contributes to the long-term success of an organisation by creating a resilient, adaptive, and high-performing workplace. An organisation that prioritises safety is better equipped to navigate challenges and capitalize on opportunities.

Risk mitigation and emergency preparedness:

Safety leaders focus on identifying and mitigating risks, as well as developing emergency preparedness plans. This proactive approach helps the organisation respond effectively to unforeseen events, minimising disruptions and ensuring business continuity.

Sustainable business practices:

Safety leadership contributes to sustainable business practices by minimizing the environmental impact of operations and promoting responsible resource management. Sustainability practices align with societal expectations and can enhance the organisation's standing in the market.

The leadership commitment to safety transcends mere compliance; it becomes a shared responsibility ingrained in the fabric of the organisation. In this symbiotic relationship between leaders and safety leaders, the dividends are evident – a workplace where individuals thrive, risks are mitigated, and success is not only measured in productivity, but in the well-being of every team member. This personifies an organisation's pledge to its greatest asset – 'its people'.

By investing in safety leadership, organisations not only fulfill their 'Duty of care' to employees, but also lay the foundation of a resilient and successful organisation destined for enduring triumph of their business objectives.

In the collective pursuit of safety excellence, it is vital to recognise that while leaders are appointed, the mantle of a safety leader is taken on, as an assumed responsibility. In this paradigm, if a leader is a 'Hero,' a safety leader emerges as the undisputed 'Super Hero.'



Gurpreet Singh
Managing Director
United Manufacturing Co.

When we think of war, the image that often comes to mind is that of soldiers on the front lines. Yet, beyond the battlefield, a different kind of hero works tirelessly to protect lives and infrastructure — the firefighter. During wartime, firefighters take on roles that go far beyond extinguishing fires. They become defenders of cities, rescuers of the vulnerable, and key players in maintaining civil resilience amid chaos and destruction.

A Crucial Civil Defense Force:

During war, cities and towns can become targets of bombings, missile strikes, and sabotage. These attacks often result in widespread fires, structural collapses, and hazardous conditions. Firefighters are among the first to respond, often risking their own lives to save others in dangerous and unpredictable environments.

Their roles in wartime include:

- Extinguishing fires caused by bombings or shelling
 - Rescuing civilians from collapsed buildings
 - Evacuating wounded individuals under threat of continued attacks
 - Mitigating hazardous materials and dealing with chemical or fuel-related fires
- Protecting key infrastructure such as hospitals, power stations, and water supplies



The Role of Firefighters During War: Guardians . Beyond the Battlefield

Historical Examples

The Blitz – London, World War II

One of the most iconic examples of firefighters in wartime is during the Blitz in World War II. Between 1940 and 1941, London was relentlessly bombed by Nazi Germany. The fires that engulfed the city each night were extinguished not by soldiers, but by thousands of brave firefighters, many of whom were volunteers. They battled fires amid falling bombs, collapsing buildings, and limited equipment. Their resilience helped save countless lives and kept the city from total ruin.

Modern Conflicts

In more recent conflicts — such as those in Syria, Ukraine, or Gaza — firefighters continue to play a vital role. They often operate in war zones with little support, driving damaged equipment into devastated areas to pull survivors from the rubble or extinguish fires in residential zones under threat of repeated strikes.

Dual Threats: Fire and Attack

Firefighters in war must navigate dual threats — the immediate danger of fire and structural collapse, and the ongoing threat of enemy action. Fire stations themselves may be targeted, and response routes may be mined or blocked. This environment requires extraordinary courage and adaptability.



They often perform their duties under:

- Blackouts and communication breakdowns
- Limited access to water and firefighting foam
- Shortages of protective gear or medical supplies
- Ongoing psychological trauma and fatigue

Collaboration with Military and Emergency Services

Firefighters often coordinate closely with military units, police, and medical teams during wartime. While the military focuses on defense and strategic operations, firefighters handle civil emergencies — a crucial role in maintaining societal function and morale.

Civilian Protection and Moral Symbolism

Firefighters represent safety, hope, and resilience in times of extreme hardship. Their visibility and commitment to saving lives, even in bombed-out cities, offer a powerful psychological boost to civilians under siege. In many war-affected regions, firefighters are hailed as national heroes and symbols of endurance.

Training and Preparedness

Firefighters in war-torn areas often receive specialized training in:

- Urban search and rescue (USAR)
- Fire suppression in combat zones
- Hazardous material (HAZMAT) response
- Triage and emergency medical care
- Disaster coordination and

Conclusion

Firefighters during war are far more than emergency responders — they are frontline defenders of humanity. Whether pulling survivors from the rubble of a bombed hospital or dousing flames threatening to engulf a neighborhood, their bravery and skill are essential to both immediate survival and long-term recovery. In times of war, they stand as reminders that even in the darkest moments, there are those who run toward danger to protect others — selflessly, fearlessly, and with unbreakable resolve.

How to Improve Occupational Safety and Health (OSH) Practices in India



Rohit Arora
Director
Prem Safety Works

Strengthen Regulatory Frameworks and Enforcement Implement the Occupational Safety, Health and Working Conditions Code, 2020 effectively-

- Ensure clear guidelines for compliance across sectors.
- Frame sector-specific rules (construction, manufacturing, mining, etc.)

Increase manpower in labour inspectorates-

- Use digital tools for inspections (e.g., smart checklists, remote audits).
- Train inspectors regularly to spot modern hazards (e-waste, chemicals, psychosocial risks).

Promote self-certification and third-party audits in low-risk industries to reduce bureaucratic delays but maintain compliance.

Improve Industry Commitment & Accountability

Make OSH a boardroom priority-

- Mandate safety audits and reporting in annual disclosures (especially in listed and large companies).

Recognize and reward safe workplaces-

- National or state-level OSH awards.
- Tax rebates or compliance-linked incentives for SMEs.

Encourage large companies to build safety capacity in their supply chains, especially where informal workers are employed.

Focus on Informal and Small Enterprises-

India has over **80% of its workforce in the informal sector**, which lacks structured OSH mechanisms.

Simplify compliance for SMEs and micro-enterprises-

- Provide easy-to-use safety checklists, templates, posters in local languages.

Government-funded safety kits and training modules- for micro and small enterprises.

Cluster-based OSH programs in industrial areas (textiles, leather, chemicals) with joint facilities and shared EHS officers.

Scale Up OSH Education & Training-

- **Integrate OSH into technical and vocational education** (ITI, polytechnic curricula).
- **Mandatory OSH induction and periodic training** in workplaces — especially high-risk sectors like construction, logistics, and mining.
- **Use digital and mobile platforms** to deliver training in local languages. (Apps, WhatsApp groups, SMS alerts.)



- **Train safety champions among workers** to act as peer educators.

Create Reliable Data Systems -

Develop a central OSH data repository at the national and state levels to track:

- Workplace accidents and fatalities
- Illnesses and absenteeism
- Safety audit results
- Complaint redressal

Make incident reporting easier and anonymous-

- Use the data to **identify high-risk industries and regions** and prioritize interventions.

Raise Awareness & Change Mindsets -

Nationwide OSH awareness campaigns, like “Swachh Bharat” but for workplace safety.

- Use **local influencers, NGOs, and media** to normalize conversations around:

- PPE usage
- Safe machine operation
- Mental health at work

Celebrate World Day for Safety and Health at Work in schools, colleges, and factories.

Provide Accessible OSH Infrastructure -

- **Access to PPE (Personal Protective Equipment)** at affordable prices for small employers and informal workers.
- **Mobile OSH clinics or vans** to conduct health checkups in industrial zones.
- **Accessible grievance redressal and legal support**, especially for contract or migrant workers.

Promote Public-Private Partnerships-

Collaborate with industry bodies (FICCI, CII, ASSOCHAM), trade unions, and NGOs to:

- Develop sectorial OSH standards
- Fund awareness and training programs
- Support victims of workplace accidents

Conclusion:

Improving OSH practices in India is not just a matter of legal compliance — it's a **critical component of economic productivity, human dignity, and sustainable development**. By combining strong policy with ground-level implementation, India can create safer, healthier workplaces across all sectors.



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Combating Forest Fires: Strategies, Challenges, and Innovations



Mr. Bharat Parekh
Director
Fire Safety Devices Pvt. Ltd.

Forest fires, also known as wildfires, are among the most destructive natural disasters, causing widespread ecological damage, loss of human life, and economic hardship. With climate change intensifying fire seasons globally, combatting forest fires has become more urgent and complex than ever. This article explores the causes of forest fires, methods used to combat them, the challenges involved, and the innovations driving progress in fire management.

Causes of Forest Fires:

Forest fires can be triggered by natural or human-induced factors. Natural causes include lightning strikes and prolonged droughts, while human activities such as unattended campfires, discarded cigarettes, arson, and land-clearing practices contribute significantly. Increasing temperatures and reduced rainfall due to climate change further create conditions ripe for ignition and rapid fire spread.

Traditional Fire-fighting Techniques:

1-Firebreaks and Controlled Burns:

Firebreaks are gaps in vegetation designed to stop or slow the spread of fire. Controlled burns (or prescribed burns) are deliberately set, low-intensity fires used to clear flammable underbrush, reducing the potential fuel for future wildfires.

2-Aerial Support:

Helicopters and aircraft drop water or fire retardant chemicals on active fires. These operations are particularly useful in remote or hard-to-reach areas

3-Ground Crews:

Fire-fighters on the ground use hand tools, hoses, and heavy machinery to dig trenches, remove vegetation, and directly combat flames. Their efforts are critical in containing the fire's perimeter and protecting nearby structures.

Technological Advancements:

1-Satellite Monitoring and Drones:

Satellites and drones provide real-time imagery and thermal data, helping authorities detect new fires early and track their progression. Drones are also used for post-fire assessments and to identify potential flare-ups.

2-AI and Predictive Modelling:

Artificial intelligence and machine learning models analyze weather, topography, and vegetation data to predict where fires are likely to occur. This helps allocate firefighting resources more effectively.

3-Smart Sensors and IoT:

Ground-based sensors can detect changes in temperature, humidity, and air quality, alerting officials to conditions favourable for fire or indicating a fire's proximity.



Challenges in Fire-fighting:

Despite advances, several challenges persist:

- **Climate Change:** Warmer temperatures and unpredictable weather patterns lengthen fire seasons and intensify fires.
- **Urban Expansion:** More people are living near or within forested areas, increasing the risk of ignition and complicating evacuation and protection efforts.
- **Limited Resources:** Fire-fighting agencies often face budget constraints, aging equipment, and workforce shortages.
- **Coordination:** Effective fire-fighting requires coordination across local, national, and sometimes international agencies, which can be logistically challenging.

Community Involvement and Prevention:

Communities play a vital role in wildfire prevention. Public education campaigns encourage fire-safe practices, such as clearing flammable materials from around homes and obeying fire bans. Programs like “Firewise USA” help neighbourhoods assess and reduce fire risk collectively.

Conclusion:

Combating forest fires demands a multi-faceted approach involving prevention, preparedness, rapid response, and technological innovation. As fire seasons grow longer and more severe, collaboration among governments, communities, scientists, and firefighters is essential to safeguard both human life and our natural ecosystems. With continued investment in technology, education, and sustainable land management, we can build resilience against the growing threat of wildfires.

The Significance of Safety in the Workplace



Contributed by:

Mr. Rahul Sakhuja

Director, Safety Experts
Chapter Head, Delhi- SAMA



In today's dynamic and fast-paced professional environments, workplace safety is not merely a regulatory requirement—it is a cornerstone of a thriving, productive, and resilient organization. The significance of maintaining a safe workplace extends far beyond compliance; it encompasses employee well-being, operational efficiency, company reputation, and long-term sustainability.

Protecting Human Lives:

At its core, workplace safety is about protecting people. Every employee has the right to a safe and healthy work environment. Whether in construction, manufacturing, healthcare, or an office setting, hazards can pose serious risks if not properly managed. A strong safety culture minimizes the chances of accidents, injuries, and fatalities, ensuring that workers return home safely at the end of each day.

Enhancing Productivity and Morale:

A safe workplace fosters confidence among employees. When workers feel secure in their environment, they are more focused, engaged, and motivated. High morale leads to higher productivity, reduced absenteeism, and better teamwork. On the

other hand, frequent accidents or unsafe conditions can lead to stress, burnout, and turnover—negatively impacting operations and costs.

Reducing Costs and Liabilities:

Investing in workplace safety can significantly reduce the financial burden associated with workplace injuries. These include direct costs like medical expenses and insurance premiums, as well as indirect costs such as downtime, training replacement workers, and potential legal action. Proactive safety management helps businesses avoid these expenses while improving overall operational efficiency.

Building a Positive Reputation:

In an age where corporate responsibility matters more than ever, companies known for prioritizing safety earn trust and respect from employees, customers, investors, and regulators. A strong safety record enhances a company's reputation, aids in talent retention, and opens doors to new business opportunities, especially in sectors where safety credentials are critical.



Staying Compliant with Regulations:

Regulatory bodies such as OSHA, HSE, and others around the world set guidelines to ensure minimum safety standards are met. Compliance with these standards is not just about avoiding fines; it demonstrates a company's commitment to ethical practices and legal responsibilities. Regular safety training, risk assessments, and adherence to safety protocols are key components of maintaining compliance.

Fostering a Culture of Safety:

True workplace safety goes beyond checklists and equipment—it's a mindset. Organizations that foster a culture of safety empower employees at all levels to identify hazards, report concerns, and participate in continuous improvement efforts. Leadership plays a vital role in setting the tone, but sustainable safety practices are built on shared responsibility and open communication.

Conclusion:

Safety is not an option—it is a necessity. By embedding safety into the fabric of workplace operations, organizations not only protect their most valuable asset—their people—but also lay the foundation for lasting success. The investment in safety today is an investment in the future: a future where businesses thrive, employees flourish, and communities are better off.





UniStar

INDUSTRIAL SHOES



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Blk/R.Blu



COMFORT

Black/Red
Size: 5x12



Nvy/Sky



Blk/Ylw



SMART

Black/Red
Size: 5x12

DURABLE – COMFORTABLE – HEAVY DUTY

*The Significance of **Safety Helmets** in Preventing Occupational Hazards*



Mr. Kamal Mittal
Director
Aktion Safety Solutions Pvt. Ltd.



“Every year, thousands of workplace accidents result in life-altering head injuries. In fact, the NCRB reported over 4,500 deaths in construction-related activities in India in 2022, with a significant share involving head trauma. These aren't isolated incidents—they're warnings.”

Aktion Safety Solutions Pvt. Ltd. in the section on suppliers or helmet selection. Something along the lines of:

“Work with the right partners – Safety is not a one-time purchase—it's a system. Engaging with experienced suppliers like Aktion Safety Solutions Pvt. Ltd. helps ensure your workforce is protected with reliable, tested, and compliant headgear.”

In the realm of occupational safety, one of the most fundamental and recognizable forms of personal protective equipment (PPE) is the **safety helmet**. Whether on construction sites, in manufacturing plants, or during utility maintenance, safety helmets play a vital role in protecting workers from serious injuries and even fatalities. Despite their simple appearance, these helmets are a frontline defence against some of the most dangerous hazards in the workplace.

Why Safety Helmets Matter ?

Protection Against Head Injuries:

Head injuries are among the most severe consequences of workplace accidents. Safety helmets are designed to absorb and distribute the force of impact, reducing the likelihood of traumatic brain injuries caused by falling objects, slips, trips, or collisions. According to the Occupational Safety and Health Administration (OSHA), a significant portion of workplace fatalities and injuries involve head trauma that could be mitigated or prevented with proper helmet use.

Compliance with Safety Standards

Wearing safety helmets is not just a precaution—it's often a legal requirement. Regulatory agencies like OSHA (USA), HSE (UK), and others have clear guidelines mandating helmet use in high-risk work environments. Non-compliance can result in penalties for companies and increased liability risks, especially in the event of an accident.

Visibility and Identification

Modern safety helmets are often color-coded and may include reflective strips, logos, or ID tags. These features enhance worker visibility in low-light conditions and help with quick identification of roles, ranks, or responsibilities on-site (e.g., supervisors, visitors, engineers).

Enhanced Worker Confidence and Morale

Workers are more likely to perform effectively when they feel safe. Providing high-quality PPE like safety helmets not only reduces the risk of injury but also demonstrates an employer's commitment to their team's well-being. This, in turn, can lead to higher morale, reduced absenteeism, and better productivity.

Protection Against Electrical Hazards

Certain helmets are designed with non-conductive materials that provide protection against electrical shocks or burns. These are essential in industries such as utilities, telecommunications, and electrical maintenance.

Choosing the Right Helmet

Safety helmets come in various types and classes based on the level and nature of protection required. Key factors to consider include:

- **Impact resistance (hard shell and suspension system)**
- **Electrical insulation**
- **Weather resistance**
- **Comfort and adjustability**
- **Helmet accessories** (e.g., visors, ear muffs, headlamps)

Selecting the right helmet for the specific work environment is crucial to ensure effective protection.

Maintenance and Training

A safety helmet's effectiveness is compromised without proper maintenance. Regular inspections for cracks, dents, or wear, along with timely replacement (usually every 2-5 years), are essential. Equally important is training workers on how to wear and adjust helmets correctly, and emphasizing a culture where safety gear is respected and consistently used.

Conclusion

Safety helmets are not just pieces of plastic—they are life-saving tools that stand between workers and potential disaster. In any occupation where head injury is a risk, helmets form the cornerstone of a comprehensive safety strategy. By prioritizing their use, employers safeguard their workforce, enhance operational efficiency, and demonstrate a proactive approach to occupational health and safety.

"A helmet may seem like a simple item—but it carries the weight of a life. By making head protection non-negotiable, we don't just follow the rules—we change the outcomes."





KARTIK FIRE PROTECTION PVT. LTD.

Manufacturer: All Types of Fire Extinguisher



FACTORY & OFFICE :

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How to Adopt a Promotion Strategy for a Fire and Safety SME



Mayur Lalit
Director
D V Enterprises



In an industry where trust, compliance, and visibility are vital, developing a solid promotional strategy can determine whether a Fire and Safety SME thrives or struggles. Promotion isn't just about advertising — it's about building credibility, educating customers, and establishing authority in a high-stakes sector.

This article outlines practical steps for SMEs in the fire and safety space to adopt an effective and sustainable promotional strategy.

Define Your Goals and Audience:

Start with clarity. Ask yourself:

- What are you promoting? (Products, services, maintenance contracts, training?)
- Who are your key clients? (Commercial buildings, factories, schools, residential buildings, hospitals?)
- What pain points do they have?

Why it matters: Fire and safety services are often seen as a compliance necessity. Repositioning them as proactive, value-adding services can differentiate your brand.

Develop a Unique Value Proposition (UVP)

Clearly state what makes your business different. For example:

- 24/7 emergency response?
- Certified professionals?
- Specialized in industrial fire suppression?
- Local expertise with quick deployment?

Your UVP should reflect in **every promotional material**, from your website to brochures to social media.

Use an Omnichannel Promotion Strategy

A multi-channel approach ensures you're visible where your audience is looking.

a. Digital Presence

- **Website:** Optimized for SEO, easy navigation, and contains service details, certifications, case studies, and contact forms.
- **Google Business Profile:** Essential for local visibility.
- **Social Media (LinkedIn, Facebook):** Share educational content, safety tips, compliance news, team highlights.

b. Content Marketing

- **Blogging:** Write about fire safety compliance laws, inspection checklists, fire extinguisher types, etc.
- **Videos:** Demonstrate product usage, customer testimonials, behind-the-scenes of installations.
- **Webinars /Workshops:** Host online safety training for businesses and facility managers.

c. Email Marketing

- Send monthly safety tips, legislative updates, seasonal service reminders (e.g., pre-summer inspections).

d. Offline Promotion

- Networking at industry expos, facility management events, or chamber of commerce meetings.
- **Sponsorships:** Partner with schools or safety awareness drives.
- **Industrial Directories & Magazine ads:** especially in industrial directories which have longer shelf life.

Build Trust with Credentials and Case Studies:

- Showcase certifications (e.g., NFPA, ISO, BIS, UL).
- Publish customer case studies with real outcomes.
- Feature testimonials prominently on your website and proposals.

Strategic Partnerships

Collaborate with:

- Construction companies
- Property management firms



- Industrial consultants
- Insurance companies (many require fire compliance and will refer services)

Referral marketing works particularly well in fire and safety, where clients often rely on trusted networks.

Track, Analyze & Improve

Use tools like:

- **Google Analytics** (website traffic, bounce rate)
- **Meta Insights** (social media engagement)
- **CRM** (conversion tracking, client segmentation)

Regularly review which promotions are working. Double down on those and drop ineffective channels.

Highlight Emergency Response & Support

One often-overlooked aspect in promotion is emphasizing **after-sales support, emergency services, or maintenance plans**. In a crisis, customers remember who showed up and who didn't.

Your promotional content should clearly state:

- 24/7 helpline numbers
- Emergency protocols
- Average response time
- AMC (Annual Maintenance Contract) options

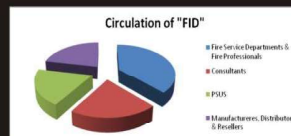
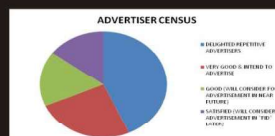
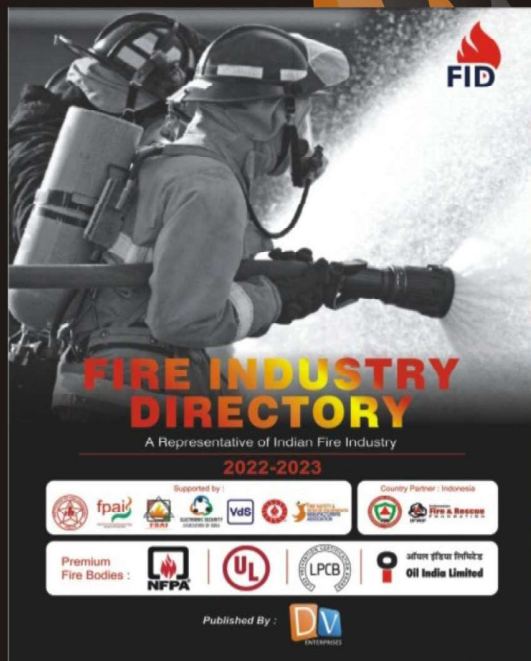
Final Thoughts

Promotion in the fire and safety industry is a delicate mix of **education, reassurance, and authority**. As an SME, you don't need a massive budget — just a smart, targeted strategy that builds trust and reinforces your expertise.

By adopting a consistent, omnichannel, and customer-focused promotion plan, your SME can gain a solid reputation and win high-value contracts in an increasingly safety-conscious world.

Fire Industry Directory

One Stop Rendezvous to access Gamut of information about Indian Fire Industry



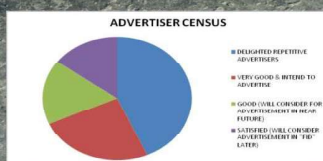
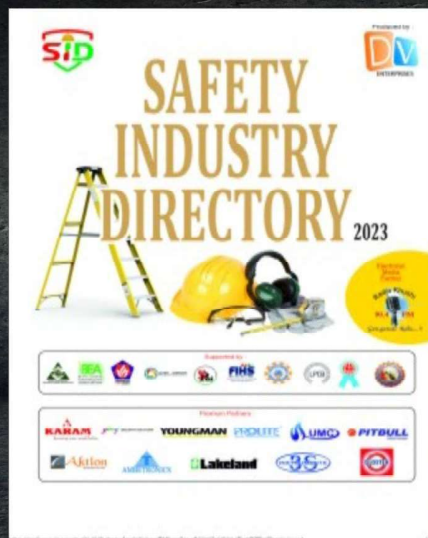
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One Stop Rendezvous to access Gamut of information about Indian Safety Industry



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Protective Footwear : A Crucial Element of Occupational Safety and Health



Mr. H.S. Bahety
Director
Unistar Footwears Pvt. Ltd.

In any workplace where physical hazards exist, protective footwear is not just an accessory; it is a fundamental element of personal protective equipment (PPE) that directly impacts the safety and well-being of workers. From the bustling activity of construction sites and the precision of manufacturing factories to the dynamic environments of warehouses and the controlled settings of laboratories, the right footwear can be the difference between a minor incident and a devastating injury. It serves as a vital safeguard, protecting equipment and personnel from a wide spectrum of occupational hazards.

Why Protective Footwear Is Essential-

Protection from Falling or Rolling Objects:

In many industrial environments, heavy materials or tools can fall or roll unexpectedly. Protective footwear—especially those with steel or composite toe caps—helps shield the feet from impact injuries, which are among the most common workplace incidents. These shoes are especially crucial in construction, manufacturing, and logistics sectors.

Protection from Punctures and Cuts:

Sharp objects such as nails, glass, or scrap metal pose a significant risk to workers walking in certain areas. Footwear with puncture-resistant soles provides an effective barrier and helps prevent injuries that can lead to infection or long-term damage. Industries such as construction, automotive repair, and waste management are particularly prone to such hazards.

Slip, Trip, and Fall Prevention:

Slips and falls are a leading cause of workplace injuries. Footwear with slip-resistant soles provides better traction on wet, oily, or uneven surfaces, reducing the likelihood of accidents and improving overall workplace safety. This category is vital in food processing plants, healthcare facilities, and cleaning operations.

Protection from Electrical Hazards:

Workers in electrical environments need footwear that can insulate against electrical shock. Electrically rated shoes—such as those labelled as EH (Electrical Hazard)—are designed to reduce the risk of electrocution and ensure compliance with safety standards. They are essential for electricians, maintenance workers, and anyone working near live electrical equipment.

Protection of Equipment and Personnel from Static Energy:

In environments where sensitive electronic equipment is handled or where flammable gases or liquids are present, static electricity can pose a significant risk. Electrostatic Dissipative (ESD) or conductive footwear helps to safely discharge static buildup from the wearer's body, preventing damage to electronics or avoiding sparks that could ignite explosive atmospheres. This type of footwear is vital in electronics manufacturing, cleanrooms, and chemical processing plants.

Chemical and Thermal Resistance:

In industries where workers are exposed to corrosive substances, hot surfaces, or molten materials, specialized footwear made from chemical-resistant or heat-resistant materials is critical. These shoes protect workers from burns, irritation, and long-term health issues. Chemical manufacturing, foundries, and laboratories often require this type of protective footwear.

Comfort and Ergonomics:

Beyond immediate protection, the long-term comfort and ergonomic design of safety footwear are paramount. Well-designed footwear, featuring proper arch support, cushioning, and breathable materials, not only helps maintain correct posture and reduce fatigue for workers who spend long hours standing or walking, but also mitigates the risk of common foot ailments and musculoskeletal disorders.



This focus on ergonomic design contributes directly to improved worker morale, reduced absenteeism, and enhanced productivity, recognizing that a comfortable worker is a more efficient and safer worker. Occupations such as healthcare, retail, and manufacturing benefit significantly from ergonomic footwear.

Legal and Regulatory Compliance:

Occupational health and safety regulations in most countries require employers to assess workplace hazards and provide suitable PPE, including protective footwear. Standards such as:

- OSHA 1910.136 (U.S.)
- EN ISO 20345 (EU)
- CSA Z195 (Canada)
- IS 15298 (India)

...define the minimum requirements for safety footwear in different work settings. Failure to comply can result in penalties and increased risk of injury claims.

Types of Safety Shoes and Choosing the correct shoe:

Protective footwear is typically classified based on the level and type of protection offered as defined by **EN ISO 20345**

Class	Features
S1	Basic toe protection, slip-resistant soles, antistatic, oil resistance, heel energy absorption
S1P	S1 features + penetration resistance
S2	S1 features + waterproof exterior
S3	S2 features + midsole penetration resistance
S4	Rubber or polymer upper, waterproof and leak-proof
S5	S4 features + midsole penetration resistance

The selection of appropriate footwear should be based on a thorough risk assessment considering the above as other factors such as:

- Toe protection (steel, alloy, composite)
- Sole properties (slip resistance, puncture resistance, chemical resistance)
- Electrical protection (EH, ESD, conductive)
- Weather and environmental conditions
- Fit and comfort (proper sizing, arch support)

Maintenance and Replacement:

Protective footwear should be regularly inspected for wear, damage, and contamination. Soles that are worn out, cracked leather, or damaged toe caps compromise the effectiveness of the footwear. This is especially important for ESR shoes as it could become a matter of life or death.

Training and Education:

Employees should be trained on the proper use, inspection, and maintenance of protective footwear. Proper training helps ensure that PPE remains effective, extends the lifespan of the footwear, and encourages consistent use.

Conclusion

Protective footwear is not merely a formality; it is a critical safety measure that prevents injury and saves lives. Employers and workers alike must recognize the importance of wearing appropriate footwear to maintain a safe and productive workplace. By incorporating protective footwear into a comprehensive occupational safety and health program, organizations demonstrate a commitment to the welfare of their employees and compliance with regulatory standards.



Mr. Ravi Kumar Sinha

Director
Kartik Fire Protection Pvt. Ltd.

“We began our journey in 2017 under the banner of Aarav Enterprises and gradually earned the trust of our customers. During our early years in the market, we identified a gap—products were either overpriced or lacked quality. To better meet our customers' needs, we launched a new startup under the name KARTIK Fire Protection Private Limited in 2021, marking a fresh beginning and our entry into manufacturing.”

Q: Can you tell us about your company & its operations?

We began our journey in 2017 under the banner of **Aarav Enterprises** and gradually earned the trust of our customers. During our early years in the market, we identified a gap—products were either overpriced or lacked quality. To better meet our customers' needs, we launched a new startup under the name **KARTIK Fire Protection Private Limited** in 2021, marking a fresh beginning and our entry into manufacturing.

In line with this vision, I initiated the production of fire extinguishers and other safety products.

Since 2024, we have been advancing with **IS 15683** certifications, ensuring full compliance with national quality standards. Today, we are proud to have established our presence in nearly every state across India—a milestone made possible by the expertise and unwavering dedication of our team.

Q: What is the quality policy of the company?

Our distribution network extends across PAN India, delivering quality products that are not only reliable and cost-effective but also backed by comprehensive warranty certification. We are excited to announce that our services will soon expand to cater to both domestic and commercial establishments, with offerings that include fire extinguishers and fire alarm & detection systems based on cutting-edge SST technology.

Q: Can you let the readers know about the range of products you offer?

We offer a comprehensive range of fire safety solutions tailored for various applications:

- **Fire Extinguishers:**
ABC Stored Pressure, Clean Agent, CO₂ Type, Water-Based, and Foam-Based Fire



- **Automatic Fire Suppression Systems:**

Modular (Powder and Clean Agent), Suppression Tube-Based Systems, and Flooding Systems.

- **Industrial & Commercial Fire Fighting Equipment:**

Hydrant Systems, Hose Pipes, Branch Pipes, Hose Reels, and Sprinklers.

- **Fire Detection & Alarm Systems (Early Detection):**

Smoke Detectors, Heat Detectors, Manual Call Points (MCP), Hooters, and Signages.

Q: Any new product launch in the plans?

Yes, we are doing R&D on mist technology, which we will introduce very soon.

Q: Are you also exporting to other countries?

We have already taken licences for export, the team is working on the client base, and very soon we will enter the export market.

Q: What is your understanding about the possible market growth of fire industry in India in four years?

The fire safety industry in India is projected to witness significant growth over the next four years, driven by increasing awareness of fire hazards, stricter government regulations, rapid urbanization, and expanding infrastructure across commercial, industrial, and residential sectors. With mandatory compliance under National Building Code (NBC) and Fire Safety norms, demand for advanced fire detection and suppression systems is expected to surge. The rise in smart buildings, data centers, and high-rise structures will further accelerate the adoption of modern fire protection technologies, positioning the industry for steady double-digit growth.

Q: What are the factors that affect safety businesses?

The safety business is influenced by several key factors including government regulations, growing awareness of fire risks, rapid urbanization, and the expansion of industrial and commercial infrastructure. Technological advancements, insurance requirements, and the need for compliance with safety norms further drive demand. However, price sensitivity, competition, and the availability of certified products and skilled manpower also play a crucial role in shaping the growth and sustainability of the industry.

Q: Any message for the readers?

We are pleased to introduce **"KARTIK"** as India's leading manufacturer of fire safety products. At **KARTIK Fire Protections**, we take pride in being one of the trusted and foremost names in the fire protection industry, offering a diverse portfolio of cutting-edge fire safety systems. Our commitment is to safeguard our customers with a comprehensive range of high-quality, approved products.

The strength of KARTIK lies in its people. Our team is composed of **seasoned professionals** from the fire protection industry and government fire services. With years of experience and a shared commitment to excellence, we strive to deliver **world-class, reliable, and affordable products**.

As we continue to grow and evolve, **KARTIK Fire Protections** remains committed to being a **trusted partner in fire safety**, delivering innovative solutions that protect lives and property across India.

Current Update



Two Dead in the Fire Incident in Vishal Meg Mart at Karol Bagh, New Delhi

New Delhi: In a devastating incident two persons are dead when a fierce fire incident in Vishal Mega Mart situated in Karol Bagh area, New Delhi.

DFS was reported at around 6:45 pm about the incident. Taking prompt action the fire department immediately dispatched 15 fire trucks along-with 90 fire fighters.

The building is with a basement and four stories above it. As per fire personnel the fire is suspected to be started from second floor. Lack of adequate ventilation made operation challenging. Since the fire was on above floors hydraulic lifts were used to access higher levels. To make ventilation the wall

was demolished so that smoke can be ventilated, that caused some delay in the operation.

The flames spread quickly and engulfed upper stories within minutes. Several customers & staff was inside when incident took place.

The body of one deceased identified as Kumar Dharendra Pratap whose body was found inside the lift and another charred body of a male found during cooling operation.

Current Update



Fire breaks out in a shop near Sri Govindarajaswamy Temple in Tirupati

Tirupati: A shop situated near Sri Govindarajaswamy Temple in Tirupati caught a major fire. The incident caused panic and alarm in the temple area. Fortunately, no injuries were reported in the incident.

The flames were emerging from the shop. Fire department sent two fire tender immediately to douse the fire. Fire personnel were seen working to bring the blaze under control in a video on social media.

The situation is brought under control. The cause of the fire is yet to be ascertained. The situation is under control. Further investigations are going on and the reason for the cause of fire is yet to be ascertained.

Current Update



Wildfires sweep through forests in drought-hit Syrian coast in major test for new government

Syria: Syria's coastal mountain region of Jabal Turkman engulfed in massive forest fire destroying thousands of hectares of forest.

Abdel Kafi Kayyal, director of civil defense in Latakia province, informed efforts to control the fires have been hampered by strong winds, rugged terrain and the danger of landmines left behind from years of war.

Due to fire 20 km cutting off roads have been burnt compelling thousands of people flee from their homes.

Fires advancing along a broad front in rugged territory.

Despite of 60 fire fighter units are in action the fires now spreading into parts of Tartous Province. The international assistance is appealed. Turkey has sent two helicopters & 11 fire fighting vehicles. Jordanian defence team crossed border to join hands to contain fire.

NASA's data centre shows that the burned area has now exceeds 180 sq km. it is larger area than the capital Damascus.

It is estimated that the fire has consumed 3% of the country's total forest area just in three days.

The country is grappling from long running drought. This may affect rainfall and temperatures.



Mr. Dilshad Ahemad
CEO & Managing Director
Deworth Equipments Pvt. Ltd.

Navigating & Mitigation in High-Hazard Industries – Petrochemical, Refinery, Distillery & Ethanol

High-hazard industries such as petrochemical plants, refineries, distilleries, and ethanol production facilities are among the most complex and risk-intensive industrial sectors. The presence of highly flammable substances, pressurised systems, volatile vapours, and intricate processing equipment makes fire and explosion risks a constant concern. In such environments, safety is not just a regulation — it's a critical operational requirement.

Understanding the Risk Landscape:

The core fire risks in these industries stem from the storage and handling of chemicals like crude oil, ethanol, and other volatile organic compounds. These materials can ignite easily, and any spark or system failure can escalate into a catastrophic incident. Add to this the confined nature of processing zones, extensive electrical infrastructure, and high-pressure equipment, and the need for advanced fire protection becomes apparent.

Challenges in Designing Fire Protection Systems:

The fire safety challenges in these industries are multifaceted. Each facility requires a tailored approach based on its specific hazards, layout, and operational conditions. Systems must be selected and designed based on a detailed hazard and operability study (HAZOP), taking into account:

- **Flash points of chemicals**
- **Process temperature and pressure**

- **Potential ignition sources**
- **Explosion-prone (hazardous) zones**

Fire protection technologies commonly deployed include foam flooding systems for flammable liquid areas, medium velocity water spray (MVW) systems for cooling and exposure protection, clean agent systems for sensitive areas, and hydrants for general firefighting.

Code Compliance and Component Selection:

Compliance with global and national fire safety standards is essential. Key standards include:

- **NFPA 11** – Foam Systems
- **NFPA 20** – Fire Pumps
- **NFPA 30** – Flammable and Combustible Liquids
- **NFPA 72** – Fire Alarm and Signalling
- **NFPA 2001** – Clean Agent Systems
- **IS 16018, IS 2189, and IS 15325** – Relevant Indian codes for suppression and detection

All components used must be UL/FM approved or ISI marked. For hazardous areas, they must be ATEX/IECEx or PESO-certified for explosion protection.



Environmental and Operational Considerations:

Extreme ambient conditions, such as temperature fluctuations, alcohol or chemical vapours, humidity, and corrosive atmospheres, further complicate fire protection. Systems must be designed with:

- **Corrosion-resistant materials**
- **Flameproof and weatherproof enclosures**
- **Dual power supplies for redundancy**
- **Advanced fire detection with multi-sensor capabilities**
- **Real-time alarm and control system integration**

Our Role in Safety Excellence:

At **Deworth Equipments Pvt. Ltd.**, we specialize in providing complete turnkey fire protection solutions for high-hazard industries. With over a decade of experience, we handle everything from site-specific design and material supply to installation, testing, and commissioning (SITC). Our team is trained in the latest codes and safety protocols, ensuring every system is compliant, robust, and reliable.

Our esteemed clientele includes industry leaders such as **Radico Khaitan, Triveni Engineering, Keyaan Distillery, JGN Distillery, Panchganga Distillery, Bajaj Hindusthan, Mawana Sugar, Parle Biscuits (Distillery Division), GAIL (India) Ltd, IOCL, OPGC, UFlex Industries, DIC India Ltd, Dabur India, Haldiram, and Coca-Cola**, reflecting our trusted presence across the distillery, petrochemical, and industrial sectors.

Conclusion:

High-hazard industries require more than off-the-shelf fire safety systems — they demand intelligent, engineered solutions built on experience, compliance, and performance. At Deworth, our proven track record, commitment to quality, and deep technical knowledge make us a reliable partner in safeguarding people, property, and production in India's most challenging industrial sectors.



**Your Trusted Partner in Fire Protection System Design,
Supply, Installation & Commissioning**



Your Project Our Responsibility



Think of FIRE Before its Start

Our Key Solutions Include



Water-Based Fire Protection Systems



Fire Detection & Alarm Systems



MVW & HVW Spray Systems



Gas Leak Detection Systems



Foam Suppression Systems



Gas Flooding Systems (clean agent, co² & Aerosol)



Sprinkler Systems



Fire water tank and pumping systems skid

Our Esteem Clientele



DeWorth Equipments Pvt. Ltd.

An ISO 9001:2015 & ISO 14001:2015 & ISO 45001 : 2018 Certified Company

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ESTD: 2016



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Ph : +8331869376 / 8122223518

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contributed by:

Mr. Naresh Sharma
Director
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The Importance of Safety Jackets for Occupational Safety

In any occupational environment where hazards are present—whether it's a construction site, a warehouse, a roadway, or a factory—ensuring worker safety is a top priority. Among the most essential items in personal protective equipment (PPE) is the **safety jacket**. Often overlooked in favor of hard hats or steel-toed boots, safety jackets play a critical role in maintaining visibility, reducing accidents, and ultimately saving lives.

What Are Safety Jackets?

Safety jackets, also known as high-visibility jackets or hi-vis vests, are garments designed with reflective materials and fluorescent colors such as neon yellow, orange, or green. These jackets make workers more visible to others, especially in low-light, high-traffic, or hazardous environments. Depending on the type and class, they may include additional features such as waterproofing, insulation, or flame resistance.

Why Safety Jackets Matter?

Enhanced Visibility Saves Lives:

The most obvious and crucial benefit of safety jackets is visibility. Workers who operate near moving vehicles or machinery—like road crews, airport ground staff, or warehouse operators—are at constant risk of being struck. High-visibility jackets ensure they can be seen from a distance and in poor lighting conditions, giving

operators time to react and avoid accidents.

Compliance with Safety Regulations:

In many countries, wearing safety jackets is not just a best practice—it's the law. Organizations such as the Occupational Safety and Health Administration (OSHA) in the United States mandate the use of high-visibility clothing in certain job roles. Compliance helps companies avoid legal penalties and demonstrates a commitment to employee welfare.

Accident Reduction:

According to multiple workplace safety studies, environments that enforce the use of high-visibility clothing have significantly fewer instances of "struck-by" accidents. Safety jackets are especially effective in reducing incidents during dusk, dawn, nighttime, and inclement weather when natural visibility is compromised.

Psychological and Operational Benefits:

When workers are provided with proper PPE like safety jackets, it sends a strong message that their employer values their health and well-being. This can boost morale, reduce turnover, and enhance productivity. From an operational standpoint, easily identifiable jackets also help supervisors monitor worker movement and location in busy environments.



Types and Classes of Safety Jackets:

Safety jackets come in different **classes**, defined by standards such as ANSI/ISEA 107 in the U.S.:

- **Class 1:** For workers in areas with minimal traffic (e.g., warehouse workers).
- **Class 2:** For those exposed to heavier traffic or low visibility conditions (e.g., road construction).
- **Class 3:** For high-risk environments where visibility is crucial, such as highways or emergency response zones.

Choosing the right class is essential to ensure the protection is suited to the level of hazard.

Key Features to Look For:

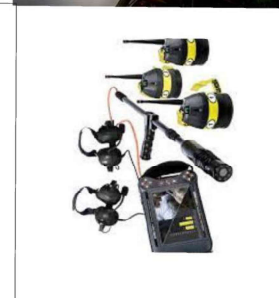
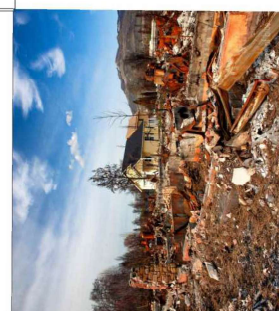
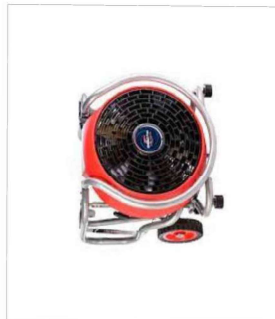
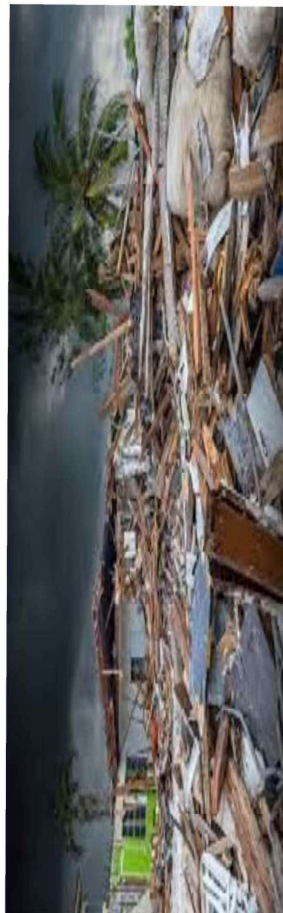
- **Reflective Strips:** Positioned on the front, back, and sleeves.
- **Durable Materials:** Resistant to wear and tear.

- **Weather Adaptability:** Waterproof and insulated options for different climates..

- **Comfort:** Breathable and lightweight for long-hour use.

Conclusion:

Safety jackets are a fundamental component of occupational safety across a wide range of industries. Their role in increasing visibility, reducing accidents, and supporting regulatory compliance cannot be overstated. Employers must prioritize the provision and proper use of high-quality safety jackets as part of a comprehensive workplace safety strategy. In doing so, they not only protect lives but also foster a culture of safety that benefits everyone involved.



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FIRE STANDARDS

S. No.	Fire Equipment	Standard
1	Flexible Fire Fighting Delivery Hose (Non- Percolating)	IS 636:2018
2	Fire Fighting Hose (Controlled Percolating)	IS 8423:1994
3	Fire Fighting Hose (Unlined Flax)	IS 4927:1992
4	Fire Fighting Hose Reel (First- Aid)	IS 884:1985
5	Fire Fighting Double Male- Female Instantaneous Pattern	IS 901:1988
6	Fire Fighting Hose (suction)	IS 902:1992
7	Fire Hose, Delivery Coupling, Branch Pipes, Nozzels & Spanner	IS 903:1993
8	Fire Fighting 2 & 3 Way Suction Collecting Heads	IS 904: 1983
9	Delivery Breaching, Dividing & Collecting Instantaneous Pattern	IS 905: 1980
10	Fire Fighting Revolving Branch	IS 906:1988
11	Fire Fighting Suction Strainer (Cylinder Type)	IS 907: 1984
12	Fire Hydrant (Standard Post Type)	IS 908:1975
13	Fire Hydrant (Underground Type), Sluice Valve	IS 909: 1992
14	Hydrant Cover, Lower Valve, Combined Key for Hydrant	IS 910:1980
15	Fireman Axe	IS 926: 1985
16	Fire Hook	IS 927: 1981
17	Fog Nozzle (for Fire Brigade)	IS 952:2012
18	Foam Making Branch Pipes	IS 2097: 2012
19	Fire Bucket (Galvanised Mild Steel)	IS 2546: 1974
20	Fire Fighting Universal Branch Pipes	IS 2871: 1983
21	Gas Cartridges for Fire Extinguishers	IS 4947: 2006
22	Landing Valves	IS 5290: 1993
23	Fire Hose Clamps & Bandages (Fire Brigade Use)	IS 5612: 1977
24	Fire Fighting Hydrant Standard Pipe	IS 5714: 1981
25	Fire Fighting Coupling, Branch Pipes, Nozzels (Used in Hose Reel)	IS 8090: 1976
26	Fire Beaters	IS 8096: 1992
27	Fire Fighting Foam Monitors & Standard Post Water	IS 8442: 2008
28	Thermoplastic Hoses (Textile Reinforced)- Water General Purpose	IS 12585:1988
29	Fire Fighting Foam Concentrate (Producing Mechanical Foam- eg. PF, AFFF, FFFP & Synthetic Foam)	IS 4989: 2018
30	Multipurpose AFFF Liquid Concentrate (for extinguishing Hydrocarbon & Polar Solvent Fire)	IS 4989: 2018
31	AFF, PF, FFFP, FP (for both hydrocarbon & polar solvent fire)	UL- 162
32	International Maritime Organisation Fire Fighting Foam Concentrate for Fixed Fire Extinguishing System	IMO MSC.1/CIRC-1312
33	Fire Fighting Foam Concentrate	ICAO
34	Fire Fighting Foam Concentrate	SP 2580 Method
35	Dry Chemical Powder (for B & C class fires)	IS 4308: 2019
36	Dry Chemical Powder (for A,B & C class fires)	IS4308:2019
37	Dry Chemical Powder (for BC & ABC fires)	ISO 7202:2018
38	Portable Fire Extinguisher (Performance & Construction)	IS 15683:2018
39	Portable Fire Extinguisher (Performance & Construction)	ISO 7165
40	Fire Extinguisher (for class A,B, C & K)	UL-711
41	Portable Fire Extinguisher (Performance & Construction)	BS EN 3-7:2004+ A1: 2007
42	Portable Fire Extinguisher (Construction)	BS EN 3-8:2006
43	Fire Extinguisher (Wheeled)	IS 16018:2012
44	Fire Extinguisher (Mobile)	BS EN 1866-1:2007

Comparison of Pellistor and Infrared Technology



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Director

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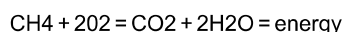


Safety professionals faced with the task of specifying economical gas detection systems for combustible gases and/or vapors have two choices: catalytic bead (pellistor) or infrared sensing systems.

While the time-honored catalytic bead is still available, low cost solution for many applications, recent improvements in infrared detection technology have made it the technique of choice for demanding environments. A more detailed look at these technologies will reveal why this is so.

Catalytic Bead Technology

Theory: A catalyst is any material capable of increasing the rate of a chemical reaction by providing an alternate (lower free energy) reaction pathway, without itself being consumed in the process. For gas detection purposes, an oxidizing metal dispersed on a porous, high surface area ceramic substrate provides sites for a series of bond-breaking and bond-forming reactions to take place. The activation energy for these catalyzed reactions is lower than for the uncatalyzed reaction pathway, therefore the rate of reaction is increased. Ignoring the intermediate steps, combustible gases coming into contact with a catalytic metal deposited on a ceramic bead are oxidized (burned) according to the following chemical reaction (using methane as an example):



The energy released changes the electrical resistivity in one arm of a Wheatstone Bridge circuit containing the catalytic bead, causing a current to flow, which is approximately proportional to the amount of combustible gas, consumed.

Practice: Coils of platinum wire are embedded inside a matched pair of 1mm diameter ceramic beads which form part of the Wheatstone Bridge. A current flow between 200 to 320 mA heats the catalytic beads resistivity to about 450 degrees C. One of the ceramic beads is impregnated with a catalytically inactive; it is included in the circuit so that environmental pressure, temperature and humidity effects can be factored out. Ceramic bead pairs are carefully matched to avoid introducing additional error into the system due to differences in thermal mass, density, etc.

As might be expected, the response of the catalytic bead varies

according to the nature of the gas being oxidized. While predictions can be made based on reaction enthalpy and diffusion rates, for practical purposes the actual response must be determined empirically for a particular catalytic bead design. The target gas is applied and readings of the sensor output in millivolts versus known LEL percentages are tabulated; the response of the target gas can then be reported as mV% LEL. Sample sensitivities are given in Table 1.

Advantages and Disadvantages of Catalytic Bead Sensors

The main advantage of catalytic bead sensors is their low cost, a not inconsiderable advantage when working on a project with a fixed budget. A base model sensing head for a 4-20 mA output can be purchased for under \$500. For this small investment, the user gets a reliable instrument capable of detecting a wide range of combustible hydrocarbons, which provides safety protection on a broad scale.

But catalytic bead sensors have several disadvantages also:

1. Poisoning: This can occur when compounds containing sulfur, phosphorous, silicon, or lead form strong bonds with the catalyst surface, permanently tying up active sites and gradually diminishing the sensitivity of the sensor. Carbon deposits left behind by byproducts of combustion can also poison the catalyst. It should be noted that poison-resistant sensors have been developed to combat this problem.

2. Polymerization: Monomers such as styrene can polymerize in contact with the high temperature catalytic bead, again blocking active sites.

3. Oxygen Requirements

- Since at least 10-vol.% oxygen must be present for efficient combustion to take place, catalytic beads do not work in inert atmospheres, such as nitrogen.

- At high concentrations of combustible gas, insufficient oxygen results in incomplete oxidation, causing the signal to drop. This causes a peak in the output versus combustible gas concentration curve, which can lead to 'false safe' signal outputs.

Infrared Detection Technology

Theory: Electromagnetic radiation interacts with atoms and molecules in different ways, depending on the wavelength, and hence the energy, of the radiation. High energy x-rays, for example, can penetrate deeply into the electron shells of atoms and excite the inner electrons to higher energy states. Ultraviolet rays, having less energy, affect only the outer electrons. Infrared (IR) radiation, with less energy still, causes no change in the electron energies of a molecule. Rather, it interacts with the bonds holding the atoms of a molecule together, which are in constant motion, bending and stretching at a characteristic frequency that depends upon the strength of the bond and the masses of the atoms (or group of atoms) it is holding together. When IR radiation of the characteristic frequency impinges on a vibrating molecule, it is absorbed by the molecule, thus attenuation will be greater as the number of absorbing molecules in the path increases, so information about the concentration of the molecules present can be obtained. This is the basis of the detection of combustible gases using IR detectors.

Practice: For combustible hydrocarbon gases, the characteristic 3.3 wavelength corresponding to the stretching of a C-H bond is monitored. To eliminate the contributions to absorption caused by environmental factors such as dust and humidity, a second wavelength (typically 3.0) is monitored as a reference. This reference wavelength is one that will have no contribution from the C-H stretch interaction, so that absorption due to dust and humidity can be factored out.

A single IR light source shines through the cuvette containing the sample of gas being monitored. After passing through the gas sample, the light beam is split and sent through two filters, one at the 3.3 analytical wavelength, the other at the 3.0 reference wavelength, and onto the detectors.

Advantages and Disadvantages of Infrared Sensors

This first generation of IR detectors represented a large improvement over the catalytic bead sensor in the following ways:

1. Combustible gases can be monitored in inert atmospheres, since the presence of oxygen is not required.
2. The problem of 'false safe' readings due to insufficient oxygen for combustion at high concentrations of combustible gases is eliminated since the IR detector is unaffected by oxygen depletion.
3. Compounds that poison catalytic beads have no effect on the enclosed optical system of an IR unit.
4. IR detectors require less routine maintenance. Calibration intervals can be less frequent since the optoelectronic system is inherently stable and will not tend to drift.
5. Self-diagnostic tests can be built into the IR detector to inform the operator of potential fault conditions.

The main disadvantage of infrared sensor typically costing in the range of 2 to 3 times that of a catalytic bead sensor. In addition, gases such as hydrogen, which are easily detected by combustion methods, do not absorb infrared energy and so are

not detectable by this method.

The Second Generation of Infrared Sensors

Despite many advances, the first generation of IR gas detectors left some room for improvement. Direct compensation for drift due to ambient temperature fluctuations and for effects due to the aging of the light source or detector were incorporated into the second generation. These improvements were achieved through 'double-compensating' optics with the introduction of second lamp whose light shines only within the detector assembly, never into the outside atmosphere. This internal lamp compensates for the changing characteristics of a detector or lamp with age or because of ambient temperature fluctuations; it is not influenced by the external gas concentration. The frequencies of the two lamps are modulated to provide another pair of signals, giving a total of four signals at the detectors. In the final calculation, all effects due to external influences cancel out, leaving only the gas concentration as desired.

Conclusions

Table 2 summarizes the features of catalytic bead and infrared sensing technologies. Clearly, there is room for both techniques in the modern gas detection scheme. Where initial investment cost is the primary concern, the catalytic bead sensor is a time-tested product with sensitivity to a broad range of combustible compounds. However, the initial savings may be consumed by maintenance and sensor replacement costs, especially in conditions where poisoning or polymerization might occur. The comparatively high initial cost of infrared technology could pay off in the long run through higher reliability and reduced maintenance bills. The information presented here should make the decision-making process easier for safety professionals charged with specifying gas detection systems.



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FOAM CONCENTRATE

- ▲ Film Forming Fluoro Protein (FFFP)
- ▲ Protein Foam Concentrate
- ▲ AR-AFFF Foam Concentrate
- ▲ High Expansion Foam
- ▲ Training Foams
- ▲ Fluorine Free Foams
- ▲ Protein Foam Concentrate
- ▲ Film Fluoroprotein Alcohol Resistant
- ▲ Film Forming Fluoro Protein Foam Concentrate
- ▲ Fire Fighting Hazmat
- ▲ Concrete Foams

EQUIPMENT

- ▲ Bladder tank
- ▲ Balanced pressure proportioning system
- ▲ Fire Chem foam maker
- ▲ ABC - Type portables
- ▲ Dry powder fire extinguishers
- ▲ Carbon dioxide fire extinguisher
- ▲ Clean agent fire extinguishers
- ▲ Freeze fire kitchen fire extinguisher
- ▲ Fire Chem high expansion foam generator (fcx-250)
- ▲ FSD GRS 400 portable firefighting system

DRY CHEMICAL POWDER

- ▲ Sodium Bicarbonate based
- ▲ Potassium Bicarbonate based
- ▲ ABC Powder Mono Ammonium Phosphate based
- ▲ Urea And Potassium Bicarbonate based
- ▲ Fire Chem Force
- ▲ Freeze Fire TEC Powder



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