



### **3 Best Safety Management Systems for Construction**

Construction is one of the most dangerous industry sectors. Be it a fall, a mechanical malfunction, or problems with exposure, construction workers can face serious injury while on the job.

A good safety management system (otherwise known as an SMS) can go a long way to help prevent accidents and occupational hazards.

An effective SMS goes beyond a prescriptive, “do this, don’t do that” approach to construction safety. Let’s explore why.

#### **From a General Rule Book to Many Individual Systems**

A long time ago, when construction managers still used paper notepads and slide rules, and before construction management software made its debut in the industry, early safety management systems were already in use. Based on safety regulations of the time, they were “one size fits all.” Government inspectors checked that construction companies were operating according to the legislation.

The assumption was that if your company was legal, it was safe.

Fast forward to a time when managers started using calculators. In the next generation of safety management systems, there was a fundamental change. Instead of doing safety by the government’s prescriptions, companies had to

assess their own health and safety requirements. They had to establish some kind of SMS that showed they were taking all reasonable measures to keep their employees and others concerned (subcontractors, suppliers, customers, members of the public) safe throughout the workday.

By the time those calculators started morphing into PCs, many construction companies had figured out that there were at least three reasons to have an effective safety management system:

- **Moral obligation.** No company should place its employees, or people associated with the work of the company, at risk.
- **Regulations.** Most states and nations make it a legal responsibility for companies to promote and maintain secure working conditions.
- **Cost-effectiveness.** Time, effort, and money spent on preventing accidents is less than the expense of dealing with accidents afterwards.

The next step was to find out how to implement the right SMS. Surprisingly perhaps, while other sectors like aeronautics and air travel had been relatively well served with SMS solutions, finding a suitable basis for staying safe as a construction company sometimes meant a little digging.

### **What Must a Top Safety Management System Do?**

Essentially, a safety management system for construction is a systematic way of identifying hazards and managing risks relating to the construction workplace.

The SMS must include the construction company's policies, procedures, systems, organizational deployment, and accountabilities for making sure that the necessary precautions have been taken and are being maintained for the safety of all concerned. More than this, the SMS must be embedded in the culture of the company, so that it is applied by all.

A properly performing SMS will typically include:

- **Identification of all safety hazards** relating to the company's activities and assessment of the risk associated with each hazard.
- **Risk management procedures** to keep risk from hazards down to acceptable levels (which may in some cases mean a level of zero).
- **Continual monitoring** with regular evaluation of safety performance.
- **Continual improvement** of the effectiveness of the safety management system.

These items are frequently managed in a “Plan-Do-Check-Act” cycle of continual improvement, or a PDCA cycle for short.

1. **Plan.** From the hazard and risk assessment, the safety policy and procedures are defined and the resources allocated for putting them into action.
2. **Do.** The policy and procedures are applied.
3. **Check.** Safety performance is measured, in order to check on the relevance, completeness, effectiveness, and efficiency of the implementation.
4. **Act.** Any appropriate remedial measures or improvements are defined, leading back into the planning step (1) above, to restart the cycle.

An SMS is a *method*, rather than a product. The implementation of an SMS may be paper-based or software-based, for instance. However, the implementation must be documented and auditable, meaning that an safety inspector (among others) can check it.

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To make this list, we looked for certain characteristics in each SMS. Applicability to the construction industry was one criterion, naturally enough. A relatively high level of adoption by enterprises and organizations was a good sign. Backing by a large or even international organization willing to maintain and enhance the SMS scored points as well. The final selection was:

1. **HS(G)65.** Guidelines from the British Health and Safety Executive
2. **ILO-OSH 2001.** The International Labor Office “Guidelines on Occupational Safety and Health Management systems.”
3. **OSHA.** The US Occupational Safety and Health Administration guidelines.

Each option in the list above offers a basis on which a construction company can build its own SMS or acquire products or services (a software application, for instance) aligned with the option concerned.

#### HS(G)65 – International Guidelines from the British Health and Safety Executive

The British Health and Safety Executive (HSE) is the UK government entity that conducts workplace safety inspections. The reference for the HSE guidelines, entitled “Successful Health and Safety Management,” is HS(G)65. They also apply the PDCA (plan-do-check-act, see above) model. Like OHSAS 18001, HS(G)65 can be audited for compliance and has achieved a certain level of international adoption.

## **ILO-OSH 2001, the Standard from the International Labor Organization**

In 2000, the International Labour Organization (ILO) suggested ISO (the International Organization for Standardization) might create an international standard for an SMS, like ISO 9000 (quality). However, ISO rejected the idea. As a result, the ILO (and not ISO) reviewed a score of occupational health and safety management systems from different countries, in order to produce its own “Guidelines on occupational safety and health management systems – ILO-OSH 2001.”

The ILO guidelines are not certifiable, but like the other major SMS standards, they seek to ensure safety, while preserving productivity and efficiency. The guidelines are also tailored to different industry sectors, one of which is construction, referenced by Article 2.3. ILO-OSH 2001 is referenced by Japan in particular, which has produced its own ILO-compatible construction SMS guidelines under the direction of JCOSHA (The Japan Construction Occupational Safety and Health Association.)

At the end of 2013, the ISO approved a proposal to develop an SMS standard analogous to the OHSAS 18000 standards. The new ISO standard is ISO 45001. One of the goals of ISO is to increase international recognition and implementation of ISO 45001, compared to current levels achieved by the OHSAS standards.

## **OSHA and its Safety & Health Management Systems eTools**

In the US, the Occupational Safety and Health Administration (OSHA) is the federal government agency working to improve safety and health at work. OSHA applies federal laws for the US in general, although some states also have their own mandatory safety and health programs. Instead of prescribing an SMS, OSHA takes a different approach. As part of its guidelines, OSHA offers its eTools, which are “electronic compliance assistance tools to provide guidance for creating a comprehensive safety and health program.”

eTools are not part of the separate enforcement activities of OSHA. They can go beyond regulatory requirements by offering recommendations for good industry practices, but they do not create new requirements simply because a company uses them. eTools offer practical assistance via their different modules for:

- Best practices for consistently achieving the right levels of safety and health
- Measuring the return on investment that safety and health programs can provide
- Creating a change management system

- Monitoring indicators to see if a company's safety and health performance trends are positive or negative
- Successfully embedding safety and health into the way a company is run

### Software Applications for OHSAS 18001 Certification and HSE Auditing

Why reinvent the wheel? The more popular a standard is, the greater the chance that construction management software applications exist to help you follow that standard.

The OHSAS 18001 Occupational Health and Safety Management Software System from Intalex is one example.

The solution is a set of software applications that address each part of OHSAS 18001. Using the whole set, a construction company can stay compliant with the OHSAS 18001 standard. Alternatively, individual modules of the Intalex solution can be implemented for specific compliance needs.

The applications, 17 in total, are grouped into the categories of Incidents & Risk Management, Audits & Inspections, Documents & Training, and Compliance & Operations. The user interfaces (including mobile and offline) in each case offer reports, dashboards, email notifications, and task management, as well as access to a client community and a portal for support and learning.

Another vendor's software, MyOSH, offers functionality for HSE auditing, as well as for compliance with other occupational health and safety guidelines, standards, and regulations. MyOSH is available as a cloud-based application and as a mobile app at four levels: small, medium, large, and enterprise. Core functionality includes risk identification, incident investigations, job safety analysis, inspections, audits, and training management.

### Do Spreadsheets or DIY Apps Make Sense for Implementing an SMS like ILO-OSH 2001?

When slide rules turned into calculators, and calculators became PCs, the floodgates opened up for the use of spreadsheet software, the classic example being Microsoft Excel.

There may be a temptation in construction safety management to turn to spreadsheets to track safety resources, training, and controls. While spreadsheets can be powerful tools, they lack many of the functions necessary to make an SMS a living, collaborative project with the right bilateral communications between a construction company and its workers. Above a certain size or level of complexity, an approach based on spreadsheets quickly shows its limits.

On the other hand, there may be few commercial software applications available to support certain SMS standards or guidelines. ILO-OSH 2001 is a case in point. Free applications, shareware, and open-source construction software may exist, but software support and updates are not always available.

Some construction companies have opted to make their own SMS software application. The PCL construction company, for instance, has produced its own Safety Management Center (SMC) to reduce time spent on reports, improve statistical accuracy, and display safety trends and analysis in real time. Enterprises like PCL, with access to the right IT resources, may find that an in-house solution is justified. On the other hand, smaller and start-up contractors may find it more feasible to use a commercially available platform, and this may affect their choice of the SMS standard or guidelines to be followed.

### **Finally, Which Safety Management System Should You Use?**

The circumstances and needs of your own construction company are unique, but some pointers may help decide which systems are suitable.

- Your choice may depend on where your construction company is located. In the US for example, OSHA and any state-specific requirements must be met. In Japan, ILO-OSH 2001 may be the obvious choice – or the Japanese equivalent, which is the JCOSHA Construction Occupational Health and Safety Management System Guidelines.
- Your customers may be more prepared to do business with you if you can demonstrate compliance with an SMS that they favor. Alternatively, they may be willing to approve the SMS you want to use. Do a little market research – ask them!
- The process for certification to this popular standard can start today.
- If you require a software-based solution to set up your SMS and demonstrate compliance for international certification, OHSAS 18001 may again be a good compromise.
- If ISO certification is your goal, rather than OHSAS or ILO, and your schedule is flexible, consider waiting until the ISO 45001 standard is published.
- As a small construction company, look at flexible cloud-based SMS solutions that allow you to start today, then upgrade your SMS capabilities as your construction company grows.

Nevertheless, the golden rule is to have a safety management system that works for your company. While certification and compliance to a given SMS standard can make your construction company look more attractive to your market, the immediate priority is for a properly performing safety management system that helps keep your employees, customers, partners, and the public safe.

## More?

Do you have a safety management system that you like that I didn't cover here? Are there software solutions that you particularly like (or dislike)? Let me know in the comments below!

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