

High Material Issue 05

# Building up workplace safety

Samsung SDI strives to manage safety & health and hazardous materials so that our employees can work at safe and healthy work places. In 2016, our executives claimed that 'safety is the first principle in the management' and we worked hard to build safety centered cultures at our work places in domestic and overseas as well as in our supply chain. In addition, we offered continuous trainings and promoted safety cultures to help the employees become aware of the safety in their daily operations and better comply with the laws.

In 2015, Samsung SDI implemented special activities on each component that comprise of safety culture for further improvements after an evaluation of safety culture level for the first time. In 2016, we improved our safety culture level to 'Proactive level' where employees voluntarily participate in safety activities.

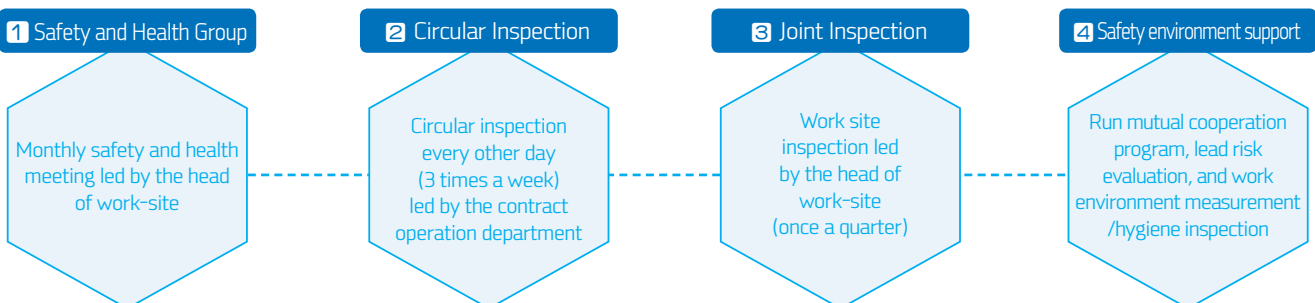
## Safety Improvement Activity

Samsung SDI holds a monthly safety environment meeting led by business division heads and a bi-monthly meeting hosted by the CEO to check on safety issues that can occur on-site and to take proper actions. In addition, the heads of business divisions and work-sites, and executives of research and staff lead 'My-Area Inspection' following the CEO's on-site inspections, to monitor risk factors at work-sites on a regular basis and to improve communication with employees.

### Emergency response training and safety activity

Samsung SDI established emergency scenarios such as explosions, chemical leakage, disasters and accidents in the closed places and implemented emergency response trainings and safety activities every quarter to help our employee better respond to those situations.

### Safety management and inspection process for in-house partner companies



### Improvement Goal for Safety Culture

Stage	Goal	Definition
Creative	After 2019	Every member encourages one another and develop oneself to further advance the safety environment.
Proactive	At 2016 level	Every employee voluntarily and actively participates in safety environment activities
Calculative	Achieved in 2015	Safety environment management system is introduced and internalized
Reactive		Reactive compliance of the minimum requirements (e.g. law) and make responses after the incident
Ignorant		The safety environment management is not in place at all.

For in-house partner companies, we check their safety levels and support safety related activities considering them as candidates which should have the same safety level as Samsung SDI has, and periodically evaluate the safety management level to reflect the evaluation in new contracts or contract extension.

### Risk assessment activities

Samsung SDI assesses the risks in order to build safe workplace even for daily operations. Employees must check their protection kits before entering the laboratory and fill out safety work permission sheet before working on-sites for risk managements. We also do pre-screenings on new facilities before they are installed in addition to the risk assessments. In this way, Samsung SDI is removing fundamental risk factors through a habit of risk assessment at company-wide levels.



Target: 3.9



Target: 12.4

## BUSINESS CASE



### Improve safety management monitoring and evaluation

Samsung SDI conducts intensive inspections including inspections across the work-sites, operation inspections and emergency system inspections. Especially, each work site has its own safety inspection systems such as 'daily inspection' and 'tsunami inspection' while Samsung SDI strives to improve its safety measures by applying 'My Area Inspection' to every employee and setting every 4th of the month as the 'safety inspection day'. In addition, we put more emphasis on the safety environment for employee's MBO as a part of performance review. Beginning in 2016, we evaluated safety responsibility at work sites to consider it into performance review. We also intensified reward/penalty regulations on safety environment and impose stricter preventive or disaster penalties to those who violated the core safety conducts and reward excellent safety environment cases with the CEO year-end bonus.

#### Regular inspection

- ▶ cross inspection between the work sites
- ▶ operating audit
- ▶ emergency system inspection

#### Special inspection

- ▶ daily inspection
- ▶ my area inspection
- ▶ tsunami inspection
- ▶ safety inspection day (on every 4th of the month)

### Safety Environment Reward Status

Classification	Award Name	Candidate	Awarder	Unit
CEO Year-end Reward	Entire work sites/departments		CEO	Grand prize, gold, silver, bronze
	Potential risk discovery		Team Manager of safety environment infrastructure	Individual
Safety environment	Safety environment competition		Each work site	Department, Individual
	Immediate reward (at the time of occurrence)		Each work site	Department, Individual

## Chemical Substance Management

### G-EHS system establishment and operation

Samsung SDI has been pre-examining every chemical material via the G-EHS system since July 2016 in order to prevent potential accidents and improve our verification system on hazardous materials that may harm human body such as high toxic materials. We do not allow to purchase materials unapproved by the system to apply strict managements on chemical materials. This pre-examination process is only applicable to the Korean businesses, but we plan to further apply this procedure to overseas corporation beginning from March 2017.

### Response to domestic laws

We are in process of registering "Phase-in substance(s) to registration" to "Act on Registration, Evaluation, etc. of Chemicals" by June 2018 and establishing a cooperation system among the relevant departments to be ready for the revisions in future.

In accordance with "Act on Liability for Environmental Damage and Relief Thereof", we are insured for reimbursing physical or property damages of the third parties due to environmental contamination accidents and built an immediate response system by being additionally insured for potential contamination accidents that may occur during transportations out of business sites.

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## Spread of Safety Culture

Samsung SDI hosts various events not only to build a structured safety system, but also the culture that encourages the employee's voluntary participations.

### Safety Culture Campaign

We build a safety culture where employees communicate through active and voluntary participations such as SDI Talk (SDI intra-company community), club activities and safety competitions. In 2016, we held the third UCC and Slogan Contest for Safety and Accident Prevention where excellent works were selected for rewards.



### Training experts on safety environment infrastructure

Samsung SDI fosters experts on safety environment infrastructures to enhance safety and health capacities at work places and to prevent and effectively respond to the risks. In 2016, we had a total of 492 experts and each of them completed 58 hours of training.

### Regular Safety Training

We conducted safety trainings depending on ranks and types to identify risk factors for improvements. Safety trainings at business sites are composed of regular trainings, new-recruit trainings, and trainings on task changes and special safety and health trainings. We focus our employee trainings on "Occupational Safety and Health Act", general management items, accident preventions, and risks and moving lines of equipment and machines.

### Safety Training Implementation Status

Training types	Trainees	Contents
Regular Training	Manufacturer Officer Supervisor	Occupational Safety and Health Act, general management and accident prevention etc.
New-recruit training	Manufacturer Daily worker	Occupational Safety and Health Act, general management and the pre-work checklist etc.
Training on task changes	Manufacturer Daily worker	The risks and work procedure of equipment and machine, and their moving lines etc.
Special safety and health training	Manufacturer Daily worker	Trainings for tasks exposed to three harmful risks including forklift and hoist

### Standard, Procedure and Safety Regulations Compliance

We established the optimized standards and procedures to help employees at both Samsung SDI and our partner companies strictly comply with the safety regulations. At the manufacture division, we built a standard where the colleagues record the video of work performance to analyze and enhance the productivity. We secure the safety and quality by implementing work procedures in strict compliance with the standard work guideline.

일단	심리	공제	표준작업지도서			적/계정일과
관	사	경				Page 9/9
재				작성일자	구분/년	
					256 등록	
공정명	SFL Slurry공급 작업	작업명	Slurry 공급	작업 장소	SFL 핵심	
<b>작업 순서도</b>						
1. 작업준비 및 점검		2. 연결 작업		3. 본 작업		4. 공급압력 Setting
- Slurry 공급 전 Filter 및 Pump 점검상태 확인		- Carrier 공급 배관 연결		- 공급단 Valve 동작 실시		- 공급단 Pump 안전 Setting (8bar 이하)





## Key Performance Index

KPI	2017 Target	2016 Target	2016 Performance	Achievement Level
Zero Safety Incidents	0	0	0.40	Not achieved



\* Employee injury rate (Number of accidents / Total work hours×1,000,000)

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### Input

 Manufacture Capital	Safety Environment Investment	Unit	2015	2016	
	Safety Environment Investment Cost	KRW 100 million	56	230.5	
 Human Capital	Safety Environment HR Training	Unit	2014	2015	2016
	Safety Environment Infra Special HR	Persons	515	552	492
	Safety Environment Infra Special Training	Hour	24,710	27,924	28,537
	Training Hour	Hour	48	51	58
 Intellectual Capital	Safety Environment Inspection	Unit		2016	
	CEO Inspection	Case		8	
	CEO Meeting	Case		4	
 Intellectual Capital	Safety Environment Audit	Unit		2016	
	Korea	Case		1,314	
	Overseas	Case		793	

### Output

		(Number of accidents / Total work hour x 1,000,000)		
 Human Capital	Employee's rate of injury	2014	2015	2016
	Company-wide	0.34	0.47	0.40
	Domestic	0.22	0.32	0.33
	Overseas (excl. Austria site)	0.52	0.64	0.47
		(Days of loss / Total work hour x 1,000,000)		
 Human Capital	Employee's rate of loss	2014	2015	2016
	Company-wide	17.19	13.09	26.89
	Domestic	21.13	15.15	28.45
	Overseas (excl. Austria site)	11.55	10.63	25.23