

Manufacturing Safeguarding Measures – Overview

Theme	Safeguarding measures
i Workforce protection	Travel/movement to work (including work from home measures) Entry to worksite Employee health policy measures
ii Employee protection	Personal protective equipment Workplace distancing and workstation barriers Sanitization measures Worksite facility conditions Public health knowledge and capability-building
iii Non-employee protection	Social distancing measures Sanitization measures Limitations against exposure to individuals Preventions against material contamination
iv Business process adaptations	Physical workspace adaptations Digital workspace adaptations (including work from home measures) Operational and productivity process adaptations Communication and continuous improvement adaptations
v Employer-led public health interventions	Detection and tracing Personal behavior reinforcement
vi Industry-wide safeguards	Governance and councils Standards and protocols

These examples are broadly applicable to working environments in manufacturing

- Assembly line
- Build-in-place
- Small job shop
- ...

Manufacturing Safeguarding Measures

PRELIMINARY
NON-EXHAUSTIVE

Local governmental rules and decisions should always be followed carefully

i Theme: Workforce protection

Workforce protection	Protection area	Considerations ¹
	Travel/movement to work (including work from home measures)	<ul style="list-style-type: none"> • Provide dedicated transportation for all employees with social distancing (50% capacity) and sanitize vehicle after use
	Entry to worksite	<ul style="list-style-type: none"> • Establish controlled means of entrance (e.g., single point, multiple entrances, etc.) • Separate points of entry and points of exit • Establish sign-in stations or check points restricting access to employee workstations/production areas • Ensure controlled measures to minimize visitor/contractor access to facility when entering property (e.g., escorted, PPE requirements) • Limit visitors/contractors entry unless necessary to production • Visitors/contractors to fill out health questionnaire prior to entering facility • Install hand sanitizing stations at entrances and in common areas • Select list of people allowed to work based on strict criteria (e.g., age profile, previous medical history, etc.) • Suspend fingerprint-entry keypad • Arrival times staggered by 10-minute intervals over one–two hours to reduce congregation on entry and exit • Staggered breaks to reduce large group gatherings
	Employee health policy measures	<ul style="list-style-type: none"> • Mandatory 14-day quarantine in case person identified as high risk

1. Aggregation from case studies across different countries and U.S. states. Please consider the list as examples of actions; level of importance to contamination containment have not been assigned and is up to client and state/federal public health regulations and recommendations

Manufacturing Safeguarding Measures

PRELIMINARY
NON-EXHAUSTIVE

ii Theme: Employee protection

Local governmental rules and decisions should always be followed carefully

Employee protection	Protection area	Considerations ¹
	Personal protective equipment	<ul style="list-style-type: none"> • Ensure gloves, masks, and goggles for employees on the shop floor • Designate at least one person to track usage of PPE and one person per team to procure PPE
	Workplace distancing and workstation barriers	<ul style="list-style-type: none"> • Create operating “pods” (~two employees per pod) in a production line divided by physical barriers • Air-gap connected workspaces with a “clean room” to allow employees to sanitize • Ensure commercial drivers' access is limited to shipping area and separate from staff • Increase hygiene protocols for shipping/receiving areas: PPE requirements and enhanced cleaning • Minimize physical presence of non-core workers • Postpone large group training or on-site visits; set up virtual training or on-site visits
	Sanitization measures	<ul style="list-style-type: none"> • Enhanced sanitization of all common areas and of common touch points (e.g., doors, stairwell handles, light switch, elevator switch, etc.) • Procure increased amounts of soap, hand sanitizer, cleaning materials, and equipment • Designate one person per shift whose sole job is to clean surfaces • Staggered sanitation breaks for mandatory hand washing
	Worksite facility conditions	<ul style="list-style-type: none"> • Set up an infrared video camera; use of UV light lamps to sanitize work area and equipment • Ventilation per Occupational Safety and Health Administration (OSHA) guidance • Reduce high-touch surfaces (e.g., prop open bathroom doors); apply copper tape onto high-touch surfaces that can't be avoided; <i>New England Journal of Medicine</i> study found that Covid-19 survives on copper surfaces the least amount of time, 4 hours • No-touch trash bins/waste receptacles
Public health knowledge and capability building	<ul style="list-style-type: none"> • Use promotional programs around hand washing and other best practices ("Do the 5") 	

1. Aggregation from case studies across different countries and U.S. states. Please consider the list as examples of actions; level of importance to contamination containment have not been assigned and is up to client and state/federal public health regulations and recommendations

Manufacturing Safeguarding Measures

PRELIMINARY
NON-EXHAUSTIVE

iii Theme: Non-employee protection

Local governmental rules and decisions should always be followed carefully

Protection area	Considerations ¹
Social distancing measures	<ul style="list-style-type: none"> • Limit use of common dining area/cafeteria (e.g., group orders delivered to site, designated seating areas) • Limit number of people within elevator (one person per at a time or at 50% capacity) • Physical ring fencing by re-organizing into cellular layouts across buildings in facility
Sanitization measures	<ul style="list-style-type: none"> • Enhanced sanitization of common touch points (e.g., doors, stairwell handles, light switch, elevator switch, etc.) • Regular disinfection of high-touch surface areas (e.g., door handle, light switch, common tools)
Limitations against exposure to individuals	<ul style="list-style-type: none"> • Facility will disclose infection to state health department bodies and follow processes inline with health department guidelines • On detecting positive infection, consider mandatory shutdown for full deep-sanitation and testing for staff (at minimum for those in close proximity to detected case/s)
Preventions against material contamination	<ul style="list-style-type: none"> • Enhanced hygiene protocols for shipping/receiving areas • Consider two-step inventory model <ul style="list-style-type: none"> — Designated space for warehousing new inbound inventory; quarantined for 24 hours — Move inventory after 24 hours into “safe-for-use” warehousing space for use by facility

1. Aggregation from case studies across different countries and U.S. states. Please consider the list as examples of actions; level of importance to contamination containment have not been assigned and is up to client and state/federal public health regulations and recommendations

Manufacturing Safeguarding Measures

PRELIMINARY
NON-EXHAUSTIVE

iv Theme: Business process adaptations

Local governmental rules and decisions should always be followed carefully

Protection area	Considerations ¹
Physical workspace adaptations	<ul style="list-style-type: none"> • Reduce seating in breakrooms/common areas to ensure >six feet physical distance • Designate rooms to quarantine individuals until health officials are contacted/individual can safely return home or to a health facility, making sure to deep clean after use • Park vehicles one spot away from each other, where feasible • Mark designated areas with physical markers to reinforce compliance with measures
Digital workspace adaptations (inc. work from home measures)	<ul style="list-style-type: none"> • Require non-core functions to work from home until further notice • Divided critical function teams with groups alternating work in-office or using satellite sites • Digitize shift handovers and group discussions within facility
Operational and productivity process adaptations	<ul style="list-style-type: none"> • Mandatory hand washing every two hours; installation of additional hand sanitization and soaps in toilets and common areas • Shift work for white-collar workers as well as for blue-collar workers. Increase number of shifts, including spreading work over the weekends • Staggered breaks to reduce large group gatherings • Avoid meetings of more than five participants; obligatory face mask during face-to-face meetings • Signaling to alert employees before a maintenance event, allowing teams to social distance before beginning maintenance on the line
Communication and continuous improvement adaptations	<ul style="list-style-type: none"> • Provide daily updates to all employees on latest facts concerning Covid-19 in community, updated policies, and impact on business and employment • Establish team or communication chain to collect questions and concerns from community • Extensive signage and communication on stepped-up cleaning and hygiene practices with visible air purifiers, etc. placed

1. Aggregation from case studies across different countries and U.S. states. Please consider the list as examples of actions; level of importance to contamination containment have not been assigned and is up to client and state/federal public health regulations and recommendations

Manufacturing Safeguarding Measures

PRELIMINARY
NON-EXHAUSTIVE

Local governmental rules and decisions should always be followed carefully

v Theme: Employer-led public health interventions

Protection area	Considerations ¹
<div style="writing-mode: vertical-rl; transform: rotate(180deg); background-color: #e85c33; color: white; padding: 5px; font-weight: bold;">Employer-led public health interventions</div> <div style="background-color: #f9e7d3; padding: 10px; border: 1px solid #ccc;">Detection and tracing</div>	<ul style="list-style-type: none"> • Check and log daily body temperature (with contactless thermometer) for all employees, visitors, contractors, and personnel entering and reentering facility • Ensure appropriate procedures if employees exceed normal body temperature (e.g., employees get tested/allowed to work remotely/relieved from work for two weeks) and set up tracking of tested or sick employees and their point of contacts for contact tracing • Notify health officials of suspected sick employees • Group employees into teams that stick together (work, travel, live, and eat) to facilitate health tracking
<div style="background-color: #f9e7d3; padding: 10px; border: 1px solid #ccc;">Personal behavior reinforcement</div>	<ul style="list-style-type: none"> • Use promotional programs around hand washing and other best practices ("Do the 5")

1. Aggregation from case studies across different countries and U.S. states. Please consider the list as examples of actions; level of importance to contamination containment have not been assigned and is up to client and state/federal public health regulations and recommendations

Manufacturing Safeguarding Measures

PRELIMINARY
NON-EXHAUSTIVE

vi Theme: Industry-wide safeguards

Local governmental rules and decisions should always be followed carefully

Industry-wide safeguards	Protection area	Considerations ¹
<p>Governance and councils</p>		<ul style="list-style-type: none"> • Coordinate with industry associations and union organizations on best practices and capability checklists in reference to the World Health Organization (WHO), state departments of health, and Centers for Disease Control (CDC) guidelines • Covid-19 inspection service to clear sites before reopening • Local enforcement officers to regularly visit sites, physically or virtually, and fine for safeguard infractions
	<p>Standards and protocols</p>	<ul style="list-style-type: none"> • National Covid-19 standards for health inspections for specific industry/workplace environment

1. Aggregation from case studies across different countries and U.S. states. Please consider the list as examples of actions; level of importance to contamination containment have not been assigned and is up to client and state/federal public health regulations and recommendations