

7 Principles of Lean Supplies

A new approach to the Efficient Workplace

NEVER
STOP
IMPROVING



 **Kimberly-Clark**
PROFESSIONAL*

Exceptional
Workplaces*

Lean supplies: where people meet production

Lean has transformed manufacturing and continues to make a major impact on productivity, efficiency, quality and profitability.

And while many leading manufacturers have been practising Lean for years, there are still gains to be made – especially in overlooked areas like industrial supplies and Personal Protective Equipment (PPE).

To us, that's a missed opportunity.

Wherever people meet processes, there's potential for improvement.

We've seen first-hand how paying attention to these seemingly small details – and putting them in a Lean context – can deliver significant returns.

This eBook summarises our approach to 'lean supplies', a fresh approach to your lean and continuous improvement initiatives.

It's based on our experience helping hundreds of manufacturers improve their efficiency, quality and safety in measurable ways.

We call our methodology the Waste and Hazard Walk and it's helping manufacturers in automotive, aerospace, metals and other sectors look at their supplies and PPE in a new way

We hope you find it useful.

(Even more, we hope you'll get in touch so we can help apply the ideas in this eBook to your specific workplace).

Practicing what we preach.

Kimberly Clark is a major manufacturer ourselves.

Taking the Waste and Hazard Walk in our own facilities helped us save £2.2 billion and more than 1.4 million hours of waste across 25 of our own factories in 2011 and 2012. Now we do it for others and it's a pretty powerful thing.

The Seven + 1 Wastes

Lean identifies 7+1 wastes that compromise efficiency and inhibit quality in the workplace. Industrial supplies and PPE play a role in at least five of them:

1. Transportation

Too many product movements.

2. Inventory

levels of inventory building up in front of processes that are slower than the preceding processes and visa versa. We also see large batches of materials being moved around due to machine setups requiring us to run over sized batches to ensure we make good use of our machines.

3. Motion

Making people stop a task to walk to get supplies.

4. Waiting

Machine breakdowns elsewhere on the line, hold-ups created by non-optimal processes elsewhere in the factory and waiting for component delivery all lead to down time.

5. Over-processing

Doing more work on a piece than is required by the customer. Inefficient use of supplies can lead to un-necessary steps.

6. Over-production

Producing more product than is required.

7. Defects

Extra costs from rework where parts do not meet specifications

The wrong supplies or PPE can damage products.

+1 Knowledge or Latent skill

Failing to take advantage of everyone's skills and talents.

Your people are the best source of insight into their use of supplies and PPE.

The Principles

Seven ways to apply lean thinking to your industrial supplies and PPE.

THINK
LEAN



Go see

You can't discover waste from behind a desk.

A core principle of Lean (and lean supplies) is "Go see" – getting out on to the factory floor and experiences anywhere people meet production.

But you've probably walked your factory a thousand times. The challenge is to take the same walk with a fresh pair of eyes.

In this case, you'll be walking the lines looking specifically for the way your people are using industrial supplies and PPE.

– Look at how people clean up after themselves

Do they do it at all?
Do they tidy as they work or at the end of a process or shift?

What supplies do they use and how do they use them?

– Look at how people use their PPE

Do they take off gloves or glasses for certain tasks?

Do they always use the right PPE for the job?
Do they cut corners?

– Look how they apply solvents and lubricants
Are they re-using rags?

Are they walking to supply stores and back?

Are they leaving solvent containers open?

Lean is in the small details

In continuous improvement, aggregating small improvements can add up to big wins.

Industrial supplies offer hundreds of these opportunities – a simple change can effect the amount of supplies you use, the time or number of people you need for each task and the amount of complementary products you use such as solvent, paint or polish.

They can also affect safety and quality issues that can lead to serious outcomes: like accidents, injuries, missed orders, downtime and lost customers.

In short, small things can make big differences.

And if you add up the improvements you make by taking a lean supplies approach, the entire process should be self-funding, saving far more time and money than you invest.

A rag is a flag.

Rags are still widely used in manufacturing. But a rag is almost always a sign of a process that could be improved.

One Example: An aerospace OEM reduced their disposal costs by 88% when they stopped using rags and started using single-use wipers that met their specific needs consistently and efficiently. Motion and defect waste also went down, for a total cost savings calculated at €84,600. Not bad for one small improvement.

Dispensers and disposal are as important as the supplies themselves.

Production professionals are often extremely careful about the supplies they specify for use – but ignore the way those supplies are actually deployed.

As a result, the right supplies are often available but the quantity, usage or delivery method isn't fit for purpose. So, for example, too much solvent is used (a safety, waste and environmental issue).

There is an EU volatile organic compound (VOC) limit of 5 tonnes per manufacturer (regardless of size). Anything over that limit incurs a fine, which many companies simply factor in as a cost of production. Pre-soaked wipers reduce solvent evaporation which can have an impact on the overall limit.

Similarly, the way your people dispose of things like wipers, solvents and disposable gloves can lead to significant motion waste and create real hazards.

Simple solutions like a roll dispenser with a foot pedal break or a wiper pre-soaked with solvent can make a big difference.

Safety impacts can be significant too: reducing contact with chemicals, opportunities for spilling or tripping, fire risk, inhaling solvents from open containers... all of these can be avoided by choosing better dispensing or disposal methods.

Case in point: In one automotive plant, the correct solvents were used to clean up a paint booth but too much was wasted, contaminating the water system and the drainage needed major repairs.

A pre-soaked wiper delivered just the right amount of solvent, cut down waste, reduced the hazard and was easy to dispose of.

Keep asking why

'Why' is the most important word in the Lean lexicon.

In our Lean Waste Walks, we encourage people to always ask at least four 'whys' to get to the root of the problem. You'd be surprised how quickly you can get to root causes.

An example:

A worker asks for better scratch-resistant eyewear

Why?

"Because the guys are scratching them when they clean every two minutes."

Why do they clean them so often?

"Because they fog up a lot."

Why do they fog up?

"Because the masks cause the eyewear to fog."

Why?

"Because the masks don't really fit."

In this case, four 'whys' led to a counter-intuitive answer: the ill-fitting mask is the root cause of scratched glasses. A better mask for the job plus anti-mist eyeglasses solved the problems.

Getting to the root cause of a problem breaks down all of the contributors so each can be addressed. And it's worth involving the workers in the solution.

Health and safety is a waste issue.

Everyone knows that workplace safety is hugely important in preventing accidents, injuries and ill-health.

But accidents are also an efficiency issue, leading to downtime, time off work, loss of expertise, damaged equipment, lost product and more.

Of course, the human cost is primary. But it's important to see that safety problems are also a major contributor to waste.

Safe workplaces are uncluttered, well-maintained, clean, standardised and predictable – and the proper choice and use of supplies and PPE are a big part of this.

And, in our experience, products that were chosen because they cut down on motion, defect and inventory waste often lead to reduced safety risks as well.

Case in point:

A low-cost solvent was used in unnecessarily high volumes in an automotive paint area.

The fire risk became greater and greater until the inevitable happened: an explosion caused serious burns to one worker and damaged three cars.

Case in point:

A risk assessment in an aviation firm showed that using excessive amounts of solvent caused avoidable risk to \$500m worth of planes and the entire 200-strong production team.

Beware of 'workarounds'.

PPE and supplies only works if they're used consistently and correctly.

If you see people undermining their PPE or misusing supplies, don't just blame the end user. Look for the reason.

If they have a hard time turning pages of a manual, operating a digital part of a machine or packing up component parts with their gloves on, they'll take them off (ignoring the risk).

The time lost in taking off the gloves and putting them back on adds waste to the process and reduces the worker's ability to react and respond.

The important point is this: they don't circumvent procedure to cause trouble: they do it to make their jobs easier. The right PPE and supplies should do that too – but without the risk and cost.

Thirty percent of workers experiencing hand injuries were wearing the wrong glove – and an average worker injury costs \$9,600 in lost productivity.

Listen to the experts: your workers

Your people drive your success.

Their knowledge and skills, effort and energy make the difference between an average manufacturing facility and an extraordinary one.

The lean supplies approach is really all about empowering them and making their jobs easier and safer.

But nobody know their tasks better than they do. Enlist their help in your lean supplies initiatives. Ask questions. Before changing a supply or PPE, get them on board and involved:

- Ask for feedback on the change before rolling it out
- Ask them to help explain it to colleagues
- Review the change with them in three months, a year, etc

Using a team's skills and knowledge ineffectively is just as wasteful as using the wrong tools or supplies.

Case in point:

One process in an aviation company took fifteen people and five days, costing over \$50k in time and materials. Active worker involvement cut that down to eight people and three days – a massive saving.

Conclusion

Take a lean look at your supplies.

If this eBook accomplished one thing, we hope it convinced you that a lean supplies approach can make a significant contribution to your operations.

The quick wins are right there, waiting for you to find them.

Every day, more and more manufacturers are discovering new savings, efficiencies and risk reduction by taking a new look at their supplies and PPE.

We hope the principles above will help you do the same when you apply them to your own processes where people meet production.

And we hope you'll get in touch to ask for your own Lean Waste Walk. Our lean supplies expert will walk your facilities with you, then report back with specific, detailed recommendations that will save you time, money and risk.

It takes just a few hours and invariably repays that time investment many times over.

LEAN IS IN THE DETAILS

Kimberly Clark Professional

Kimberly Clark Professional provides essential solutions for a safer, healthier and more productive workplace.

Our Waste & Hazard Walk program is a part of our Efficient Workplace initiative that drives continuous improvement in operational efficiency, safety and occupational health in Automotive, Aerospace and Metal Manufacturing industries.

Further Resources

[The Lean Enterprise Institute](#)

An excellent resource site and community.

[Andy & Me: Crisis and Transformation on the Lean Journey](#)

An excellent book about Lean, by Pascal Dennis

[The Efficient Workplace How KCP helps manufacturers](#)

continuously improve.

[The Efficient Workplace video](#)

A quick overview