Allegato B Modello di presentazione

ESEMPI DI BUONA PRASSI	
TEMA	Riduzione dei compiti di Movimentazione Manuale dei Carichi nel reparto Coestrusione Film a Bolle.
TITOLO DELLA SOLUZIONE	Ribaltatore Bobine (Tilt Table)
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Referenti	
SETTORE	Produzione industriale di imballaggio in materie plastiche

COMPITO

Accatastamento in pile di 3 nel Magazzino Prodotti Finiti di bobine di film a bolle pesanti da 8 a 30 kg ed alte 1.0 mt.

Descrizione dell'azione quando svolta da una persona:
l'addetto linea Coex (reparto Coestrusione Film a Bolle), una volta che la bobina (prodotto finito, pesante dagli 8 ai 26 kg a seconda dell'ordine) è stata espulsa dal bobinatore (a fine linea), la fa rotolare, pesata ed etichettata, fino al Magazzino Prodotti Finiti dove la accatasta manualmente in pile di 3.

Descrizione dell'azione quando svolta da due persone:
le bobine da 30 kg vengono accatastate da due addetti, i quali in un primo tempo dispongono la bobina orizzontalmente, poi, con una spinta, le fanno assumere posizione verticale.

PROBLEMATICA (pericolo/rischio/esito)

L'accatastamento manuale delle bobine in pile di 3 a seguito di Valutazione dei Rischi effettuata con metodologia NIOSH è risultato essere compito che espone l'addetto a rischio di sovraccarico degli arti superiori e dunque, a lungo andare, a possibili lesioni all'apparato dorso-lombare. L'Indice di Sollevamento Composto calcolato nella Valutazione era 1.47.
Vi sono state in passato denunce di malattia professionale per lesioni all'apparato dorso-lombare da parte di lavoratori impiegati in questo compito.

SOLUZIONE (prevenzione del rischio)

E' stata installata nel reparto Coestrusione Bolle un'attrezzatura motorizzata (Ribaltatore Bobine o Tilt Table) in grado di ribaltare le bobine che vengono scaricate dal bobinatore della linea Coex. Funzionamento del Ribaltatore: Dopo aver scaricato le bobine dal bobinatore, l'addetto le deve accatastare in pile di 3 nel Magazzino Prodotti Finiti. Per far ciò, deve ora solamente (vedi foto sotto) far rotolare le bobine sul pavimento fino a riporle sulla base arancione del Ribaltatore in posizione orizzontale; semplicemente premendo un pulsante sul pannello le bobine vengono poi sollevate in posizione verticale, quindi appoggiate sul carrello manuale giallo da cui vengono poi tutte impilate insieme e trasportate in un'unica colonna verticale di tre in Magazzino, senza alcuno sforzo aggiuntivo.
Al fine di evitare lo schiacciamento degli arti superiori ed inferiori dell'addetto durante il movimento ascendente e discendente del Ribaltatore, è stato installato un dispositivo scanner sulla parte superiore dell'attrezzatura, che monitora e protegge l'area pericolosa interrompendo automaticamente il movimento del Ribaltatore in caso di presenza di parti del corpo umano nella stessa.

EFFICACIA DEI RISULTATI

- ✓ L'attrezzatura riduce al minimo i compiti di movimentazione manuale da parte dell'operatore, eliminando completamente il rischio di sovraccarico degli arti superiori e di conseguenza eventuali lesioni all'apparato dorso-lombare.
- ✓ Gli addetti di reparto sono stati coinvolti sia nella fase di Valutazione del Rischio, sia in quella di identificazione e sviluppo dell'azione correttiva. Perciò la utilizzano poiché la ritengono una loro creazione, oltre che uno strumento per salvaguardare la loro salute.
- ✓ Non vi sono più lamentele né denunce di malattia professionale da movimentazione manuale dei carichi, da quando l'attrezzatura è in uso.

COSTI/BENEFICI (compresi benefici e costi umani, sociali ed economici)	Il costo dovuto all'assenza di un addetto al compito in questione a causa di malattia o infortunio generato dal sovraccarico biomeccanico degli arti superiori è stimabile in 168 €/giorno.

❑ **OVE POSSIBILE, ALLEGARE FOTO e/o ILLUSTRAZIONI DELL'ESEMPIO DI BUONA PRASSI**, per esempio fotografie di un ambiente di lavoro riprogettato; materiale illustrativo relativo alle azioni intraprese o materiale di formazione.

INDICARE CHI DOVREBBE RICEVERE IL PREMIO	☐ **L'impresa** ☐ **Il fornitore dell'informazione** ☒ **Entrambi a pari merito** ☐ **Altri**

Keys to Success Nomination – 2009

Location:	Bellusco	**Team:**	Coex dept. Manual Handling Reduction
Name and Telephone of Team Contact:		Francesco Ascari, +39 039 6835381	

Members: Core team member size should be no greater than 8.	Maintenance: Leonardo Quitadamo (m), Giuseppe Delle Noci (nm), Roberto Fumagalli (nm), Coex Dept.: Sante Vincenti (m), Anice Cherkaoui (nm), Michele Caggiano (nm), Salvatore Piana (nm). EHS: Eugenio Lupo (nm)

Teams must be at least two-thirds (66%) non-management. Please list full names of all team members and denote if they are (m) management or (nm) non-management.

WCM Area(s) Addressed:	EI, Innovation, EH&S

EI, JIT, TMU, TPM, TQC, EH&S

Strategic Initiative(s) Supported:	Invest Wisely, Focus on Innovation

Focus on Markets and Services, Make a Difference, Performance Culture, Improve Our Customer's Bottom Line, Invest Wisely, Focus on Innovation

Project Goal Statement:	The Goal was the reduction of activities implying manual lifting of heavy loads in the Coex Department, where we have experienced several claims of musculoskeletal diseases caused by work-related manual lifting tasks. We wanted to do that in accordance with what recommended by the European Union: "... adopt appropriate means, in particular mechanical equipment, in order to avoid the need for the manual handling of loads by workers".

Business impact identified at project start (Include service, time and/or profitability improvements):	▪ Prevent additional costs due to loss of workforce (suffering back pain or disorder) ▪ Prevent legal issues due to workers' claims ▪ Prevent insurance premium increase, problems with Unions, medical expenses following occupational diseases ▪ Improve work environment and climate, as well as workers' motivation	
Project Start and Completion Dates:	March 2006	December 2008

How the goal was achieved

Clearly describe how the problem was identified, what measurements were used, what tools were used to analyze the process, the tools used during the problem solving process and how solutions were identified and implemented. What is the ROI/value to the organization for this project?

We used the **DMAIC** problem solving process (see .ppt presentation outlining the process steps, tools used and methodology details).

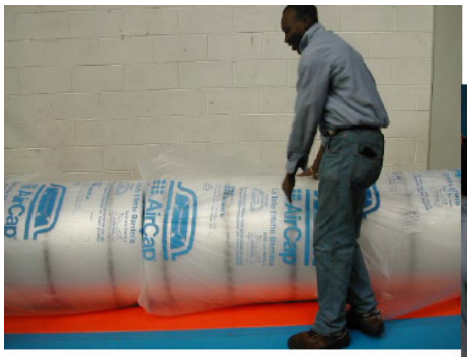
The two critical manual lifting tasks identified in the **Analyze** phase were the following:

1. Downloading heavy & bulky bubble rolls from the Coex winder, put them into bags, carry to the adjacent Warehouse, manually pile them on three levels.
2. Downloading Pool Bubble 2 mt height rolls from the Coex winder, manually recover them from the floor to the vertical position, carry to the adjacent Warehouse.

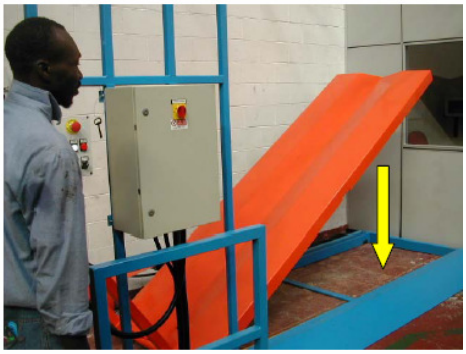
The criticality of the above lifting tasks is even higher due to their high frequency.

The two ergonomic solutions discussed and identified by the Team through the **Improve** phase are as follows.

Improve Phase Action 1: A "Tilt Table" motorized equipment has been designed and built thanks to the inputs and suggestions of the employees involved. The equipment minimizes the manual lifting tasks especially when the operator, after downloading the heavy bundles from the mandrel, has to pile them in columns of three (according to our risk assessment carried out with NIOSH methodology, the repeated manual lifting task of the highest -third- level bundle poses serious risk to the operator's back on the long term – i.e. very high Lifting Index). So the operator now just has to get the bundles roll on the floor up to the Tilt Table basis; pressing a hold-to-run button (safety measure) on the panel the three bundles will get lifted on to vertical position, then leant on the yellow manual trolley from which they will be piled all together in one vertical pile of three without any additional effort.
In order to prevent another operator's upper and lower limbs being crushed by the equipment basis moving up and down, a scanning device has been installed on the top of equipment to protect the hazardous area by automatically shutting off the equipment basis movement.





Improve Phase Action 2: A suitable device has been developed starting from team's brainstorming to facilitate downloading and bagging operations of 2 mts high bubble bundles (normally this is Pool Bubble product) from the winder's mandrel. The device consists of three idler rollers on which the bundle gets pushed from the mandrel after being put into the bag. Whilst on the rollers, the bundle bag can be easily closed by the operator, who then downloads the bundle on to the same yellow manual trolley as in the previous case 1 for suitable piling tasks in the warehouse.
Originally the bundle after being downloaded from the winder dropped on the floor, requesting the operator to manually lift it onto the vertical position and close the bag, i.e. ergonomically a very unfavourable action.






Control phase has been based on Safety Observations - Safety Inspections - Safety meetings which are key elements of 9 Safety Drivers (SAC EHS tools).
We check through behavior based *Safety Observations* that the lifting equipment are used by the operators instead of manually lifting the bundles, and that they are used in a proper and safe manner.
Through the *Safety Inspections*, we check that the lifting equipment are maintained in a good shape, not jeopardizing the safety of employees, and that they continue to be suitable to the loads to be lifted, against the changes ongoing in production.
During *Safety Meetings* we get input from shop floor workers about how to improve safety of work activities and equipment.

Investment in Project Improvements:	US$ 11.600 = 11.000 to build the equipment 1 (Tilt Table), plus other 600 to build the equipment 2 (device for downloading Pool Bubble rolls.

List all money spent on project implementation.

First Year Savings:	US$ Not applicable	Recurring Annual Savings:	US$ Not applicable

First Year Savings should be the expected savings for the first 12 months after project implementation. Recurring Annual Savings should be the savings expected each year after the first year savings.

Actual Results Achieved (against project goal):	▪ The manual handling issue in the affected areas has been eliminated by automation, mechanization or use of mechanical aids, as requested both by the European Union and by Sealed Air EHS audit requirements. ▪ Operators are happy to use the lifting equipment instead of performing lifting manually, and to be involved into the development of the two pieces of lifting equipment. ▪ We have had no more claims for manual handling of heavy loads from employees who took advantage from the two described mitigating actions, and do not expect to get any over the next years.

What is the evidence of sustained improvement? What control measurements are in place?	Behavior based Safety Observations, Safety Inspections and Safety Meetings are the core of our control measurements. These tools being part of the 9 Safety Drivers have allowed to close the loop and become part of Coex dept safety culture, being implemented on a monthly basis.

What are the opportunities to replicate this solution within the facility and/or throughout the organization?	1. The Tilt Table (equipment 1) can be replicated in all the SAC facilities having not just Bubble / Coex lines, but also Foam ones. 2. The equipment 2 can be replicated and adopted by any SAC facility manufacturing Pool Bubble products or bubble rolls with heights of 2 mts or more. The mitigation of manual handling related risks has become outstanding in our plants, also in light of the higher and higher pressure made by local H&S authorities worldwide to reduce musculoskeletal disorders in the workers of manufacturing industry.