Quality Assurance Program

QAP 123

Or >>>

These presentations were not prepared by the Commission or Commission staff and are not official documents of the CPSC, have not been reviewed by, and may not necessarily reflect the views of, the Commission.

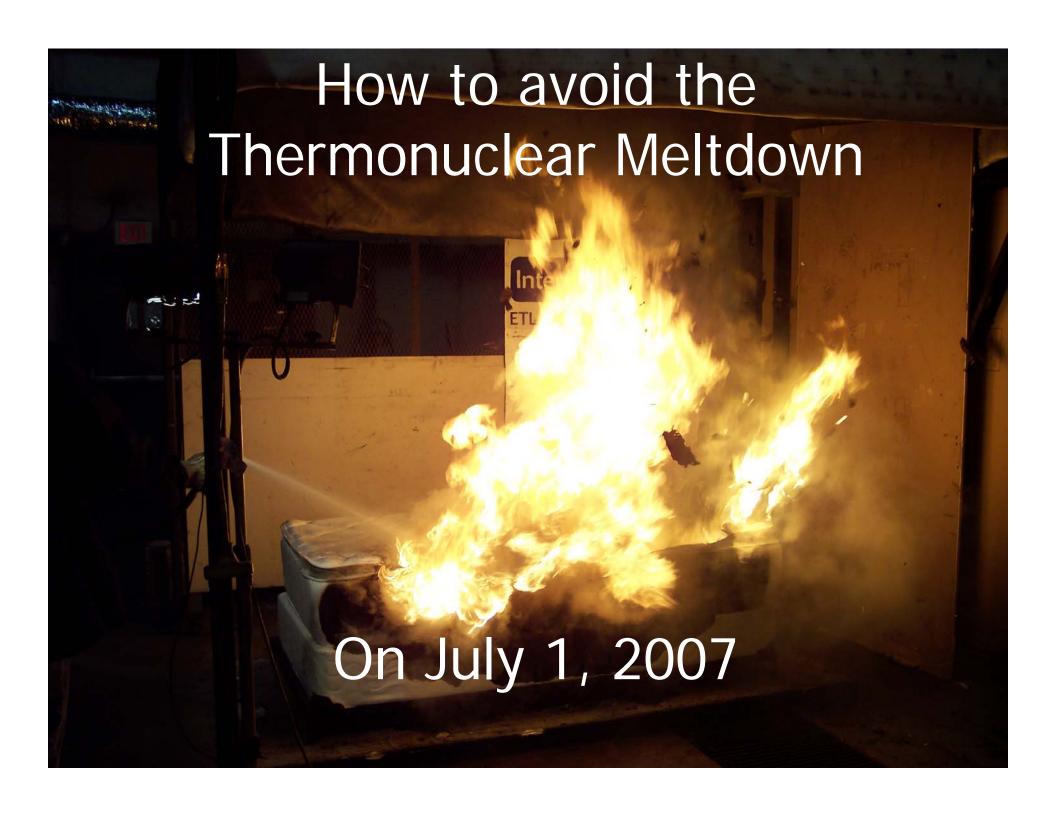


rnational Ltd. © Konnell America 884 574 6860

mm dimensions 04/Jan/2007

FR Mattress - Ticking and Filler

T21216-A45



What can Quality Assurance Programs do for you??? What are they doing now?





They make sure that the plane you are flying in is safe....



Again?????



They make sure that the food you are eating is edible and safe to consume

A-A (2:1)

????Again



They make sure that the toys your children and grandchildren play with won't harm them under any condition

3	1	T21216-54	O-ring AS568-222
			Pleated Disk holder: 1/4" NPT port
		T21216-60 : M6 x 16 Cap screw	

Tietex International Ltd.

Konneth Florid 884-574-0000 mm dimensions 04/Jan/2007

FR Mattress - Ticking and Filler

T21216-A45

A-A (2:1)

And yet again????



They work for you to make sure that the products you purchase and use meet certain expectations of quality

Actual size (1 1 1)

Tietex International Ltd.
2010 North Blackstock Road, Spertanburg, SC 20301

Kanada Florida

mm dimensions 04/Jan/2007

FR Mattress - Ticking and Filler

T21216-A4

Quality Assurance Programs in conjunction with Safety Regulations provide "Safety Assurance"





Mattresses Why oh Why Mattresses?

- Every house, hospital, hotel, camper trailer, sleeper cabs, etc...have at least one, and on average for houses..3..
- The average person spends 1/3 of their life on or around a mattress
- Children spend more time in their bedrooms and they play under their beds

In every home our beds are against a wall with all types of hazards around them



Mattresses Why oh Why Mattresses??

- Almost every mattress in a home is located against a wall with an electrical outlet and multiple items plugged in
- When we get totally worn out we go to bed; sometimes not thinking clearly
- When we are trying to get warm we will move heaters close to where we are sleeping
- We put candles around our beds to enhance our evenings

So what's the question again??

Why do we need to transform mattresses into safer products??

Mattresses are an "Essential" component in all our lives.

So, let's get on with making them safer.....

- Regulation
- Prototypes / Testing
- Record keeping

Who's the point person / backup

Quality Assurance Programs

Compliance

- 1. Point person..understanding and leading the program.
- 2. Product line analysis
- 3. FR systems review
- 4. FR systems test and solution
- 5. Build / (pool)/ qualify prototypes
- 6. Preparing for production
- 7. Maintaining compliance IE...

Quality Assurance Program

Your Point Persons

- Program Leader
- Production Manager
- Development Manager
- Quality Assurance Program
- Success of Program

- **_**_
- **_**
- **_**
- **_**_
- Depends on everyone

What type system does the Standard require?

- It requires a written QAP outlining how you will maintain the production of your units to the prototypes they are based on
- You will need to be able to show what materials were used when the beds were built and a production lot system

Quality Assurance Program

The Program, Forms, Audits, Sign off sheets, other documents and Video's represented here are designed to help the Mattress Manufacturer in their effort to be compliant under the 16 C. F. R. Part 1633 Standard.

Components of the program:

Point Person Designation

Written Program

Employee Training
Record Keeping
Production Lot Assignment
Shop Floor Controls
Audits
Problem Solving System
Incoming Material Checks
Outside testing and verification

Using:

Video Presentations Employee Training Sessions Sign Off Sheets Work In Process procedures Audits

Material Checks

Quality

Assurance

Program

Training >>>>

16 C.F.R. Part 1633

Standard for the Flammability (Open flame) of Mattress Sets

- Purpose: Reduce deaths and injuries associated with mattress fires by limiting the size of the fire generated by a mattress set during a 30 minute test
- The standard establishes flammability requirements that all mattress sets must meet before sale or introduction into commerce

Findings by CPSC as to the benefit of Standard

- Reduction of 240 to 270 deaths per year
- Reduction of 1150 to 1330 Injuries per year
- Lifetime \$ benefit from 1st year implementation of mattresses in range of \$514 million to \$1,132 million

This is the old way...



- Actual picture of burn made with FR materials, but constructed poorly
- Remember....Just because you have FR materials in the build does not mean it will pass
- There must be a strict Quality Assurance Program in place

Now a Video of a Failure...





What we want....



- This is an actual picture of one of the prototypes
- The ticking can burn and continue with low flame
 - It cannot be allowed to combust

Video of Passing Test...



What are Qualified Prototypes?

- Qualified Prototype: a representative sample of a mattress or mattress set introduced for sale in the U.S. that has passed the "burn test" criteria....passing with 3 consecutive burn tests
- Built with FR materials, FR thread, materials in certain order, and using the correct techniques in quilting, sewing, closing, etc...so that the mattress or set passes the testing

Subordinate Prototype

- A mattress or mattress set for sale in the U.S. that is based on a Qualified Prototype and differs only in size, ticking, or components or materials not to degrade flammability performance
- Each must have it's own record as to manufacturing specification and variation from Qualified Prototype.
- Each must have supporting documentation "based on reasonable criteria" that the changes will not cause failure.

Training and Documentation



Training Documentation

Training Form SFBR1

Task: Using build records to build mattresses by Knowing how the Prototype numbers are used

- Each build sheet is based on the Qualified Prototype and that identification is located on the Form in the Upper right hand corner.
- Materials and order of build must be followed in order to build the
 Mattress or Foundation and be compliant.
- Subordinate Prototypes will have their own number, but will also show the number of the Qualified Prototype it is built against.
- Subordinate Prototypes can have the same number if the only difference is the size in width or length. IE King - Queen- Full - Twin, built with exactly the same materials but just the "size" is different.
- All associates
 trained to critical
 aspects of regulation
 and use of materials
- A way to update and change as needed
- Cross reference of associates and tasks

Placement of FR fiber.....



- The placement of the FR fiber is critical
- It must be directly under the ticking for these prototypes
- When quilting the panels or quilting the border it must be directly under the ticking

Production Spread Sheets to pull materials by...

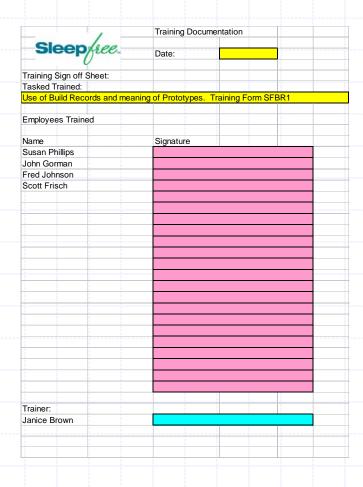


- The materials to use spread sheets must be followed
- You cannot substitute materials on your own
- These all match to Prototypes and you cannot change them

Repairs like this are not allowed...



Sign off on training



- All records showing training and instructors
- Revisions as needed
- Additions to training as associates are moved or added

What must I have to be compliant with Paperwork and Record Keeping?

- Prototypes, confirmed tests, subordinate prototypes, and their testing, criteria, and build sheets
- Production lot numbers and how many beds produced per prototype
- 3. Quality Assurance Program incorporating procedures and policies

How do the records I am using now tie in with what I need to do?

- My orders
- My production sent to the floor
- My Shipping Forms...
- Do I number my trucks shipped?
- Do I keep up with orders by customer, or by date?
- Do I have my records on computer?

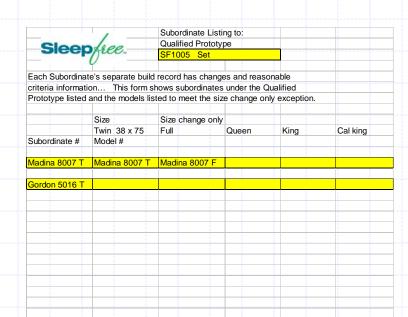
How are your model numbers assigned and how does your production go to the floor?

- There needs to be flow so that as changes are needed they can be made easily
- Will you do daily, weekly, or monthly tallies on beds built to prototypes?
- How is that information going to get to the person putting it in the records?

	Sleep/ree		
	Sicepyace	М	Data and Mallana Consult
			Prototype Mattress Sample
			Property of
Qualified Prototype	Sleepfree MS1109A		Tietex International
		*****Sample******	3010 N. Blackstock Rd
Mattress Only		*****Only******	Spartanburg, SC 29301
Mattress and Box	X	******Sample*****	
		******Record******	
Mattress	Tape with Gusset 19" (Super Pillow	/Тор)	
Description			
	Material Used /	Material Height or	Vendor
	In order of Build	Thickness	
	312 Bonnel FE	5.5	Leggett & Platt
Mattress	Polyethelyne Cups (Every other Coil		Flex-O-Lators
Core			
	Ticking	NA	Tietex
	1.35 oz. Fiber	0.5	Milliken
Тор	.8 oz. Paladin FR high loft	0.5	Milliken
Panel	1" quilting foam	1	Future Foam
Build	1" quilting foam	1	Future Foam
	1.0 oz. Backing	NA	Tietex
	1.5 oz. Insulator		Leggett & Platt
	3" foam		Future Foam
Тор	1.5" convolute	**	Future Foam
Upholstery	Innerpanel	NA	ABC
	3" foam	3	Future Foam
	1.5 oz. Insulator		Leggett& Platt
	3" foam		Future Foam
Bottom	1" foam		Future Foam
Upholstery	C237 FR	NA	Tietex
	Tielding	NIA	Tiotov
Davidar	Ticking	NA O.F	Tietex
Border	.8 oz Paladin FR High loft		Milliken
Build	.5 oz backing	NA	Tietex
	, , , , , , , , , , , , , , , , , , , ,		
		1	
_	Ticking	NA	Tietex
Gusset	.8 oz Paladin FR high loft		Milliken
Build	.5 oz backing	NA	Tietex

- Build Record
- Showing build of mattress
- Items listed in order and exactly as defined

Subordinate Build Work Sheet



- Qualified
- Subordinate #
- Models built to prototype
- Changes as product is revised

Production lots...How to designate??

- What is the size of an incoming FR material lot?
- How many units produced in a week?
- How do you keep up with units produced now? Invoices, production records?
- How do I designate lots to prototype numbers?
- What exactly does the Std require?

How are you going to keep up with your records?

		Production Lot	Designation				
Slee	epfree.	All supporting re	ecords in				
	-0	Production File	s by Week				
		WE Date					
Prototype ID		5/5/2007	5/12/2007	5/19/2007	5/26/2007	Totals	
	Lot Number	Pieces Built					
CMT010	0001	40	26	89	30		185
CTT018	0002	125	40	86	42		293
CMT008	0003	10	5	40	38		93
CIVITOOO	0003		3	40	30		93
CTT016	0004	80	70	28	45		223
CMT005	0005	32	18	40	2		92
1 1		oduction Records					
		tion the lot numbe					
	•	lot numbers with	corresponding	FR products			
Lot numbers							
	Name	Lot number					
High Loft	.8 Paladin	987980					
High Loft							

Not only FR products???

SI	eepfre	9€™	Lot Tracking Work Sheet		Form LTWS01		
Production	n Lot tracking /	Example					
		FR Materials					
Lot #'s	Prototype#	Sleepfree FR	Paladin .8 oz	Tietex	Treated	Tietex	Date Started
		Thread Lot#	High loft	C237 Filler	Cotton	Knit sock	
0001	CMT010	806459	456790	802345	450987		5/1/200
0002	CTT018	806459		802345			5/1/200
2003	CMT008	806459	456790	802345	450987		5/1/200
0004	CTT016	806459		802345			5/1/200
0005	CMT005	806459	456790	802345	450987		5/1/200
0006	CMT001	806459	456790	802345	450987		
0007	CTT009	806459		802345	×	678909	
8000	CMT017	806459	456790	802345	450987		
0009	CTT004	806459		802345			
0010							
0011							
0012							
0013							
0014							
0015							
0016							
0017							
0018							
0019							
0020							
0021							
0022							
0023							
0024							
0025							
0026							
0027							
0028							
0029							
0030							
0031							
0032							

Shop Floor Controls

- Visual references on the floor
- Proper identification of materials stored
- Correct material use sheets matching the prototype builds

FR Barrier High loft feeding into the Border Quilter



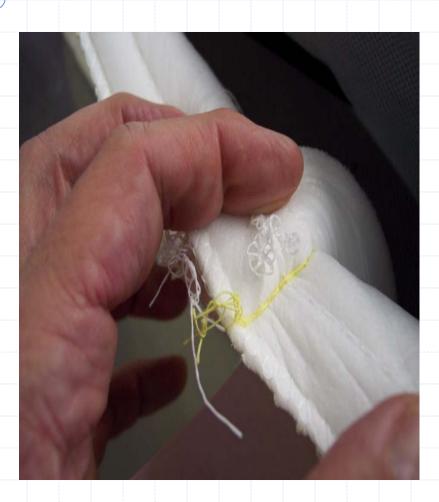
- Must have correct tension; too tight and thin places will occur
- Correct alignment needed
- Keep ticket at machine to verify fiber being used

Entry to Quilter / FR High loft



- High loft must be directly under ticking
- Tension must be correct here. Too much and the high loft stretches
- Proper alignment needed to make sure High loft is completely encased as it is processed. No narrow places

FR thread??How Important



- Critical at all closing points
- Borders sewn together.
- Top to border
- Bottom to border
- Foundation border to FR Filler
- Cannot use regular thread

Damaged FR Barrier high loft quilted. Caused by tension..



- The spot highlighted shows what happened when the roll of high loft had too much tension
- It pulled and formed a weak spot
- This piece is not usable

On the build table...

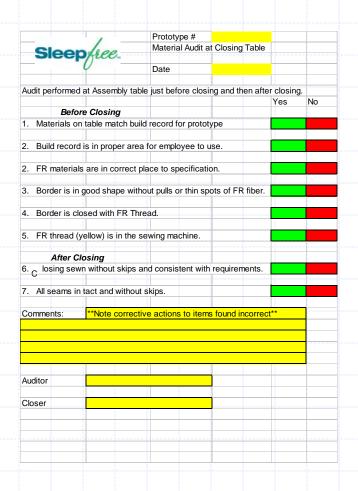


- This is a point for audits
- At this point you can see actual build up of internal materials before borders and panel attached
- After closing is another critical point to check

Audits on the floor...

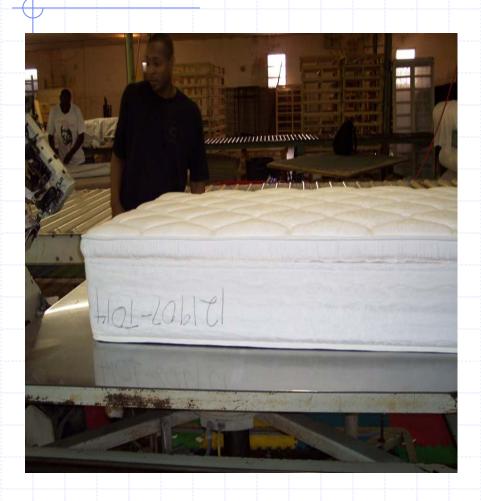
- Audits need to be performed on the floor at critical areas after training
- Schedules can be set up for audits with more at beginning and then fewer as everyone becomes better
- Failures of audits call attention to further training needed for certain employees

Documentation / Quality Checks / Production



- What kind of Quality checks are needed?
- Where should they be performed?
- How are people trained?
- How do I keep up with this?

Build Table / Check



- Check for grin or mattress pulling up tight from table
- Check all closings
- Audits to be performed here at intervals

Border Prep Area...



- Correct Size
- FR thread used at closing
- Labels attached
- Make sure no thin spots noticed

Non FR material size is important...



- The wrong size materials cause the borders to pull tight and cause a grin between mattress and foundation
- It also puts excessive stress on all closings

Work In Process Sheets

	Sleepfree			Work In Process		
	Sleep	8ee.	Work Sheet Filled out Daily			
				Date		
	WIP Inspection Closi					
	Inspections set up in	intervals of				
_	Product name			Yellow	# of Skips	
	ID #	Machine	Operator	FR Thread	1 1 1	
1						
2						
3 4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						

Incoming checks

- Certificates of Analysis...Critical for FR components
- Systems to check FR Barrier and FR Filler with Weight checks and fiber checks.
- Foam checks with weight checks.
- You are responsible to do business with reputable suppliers, and to check what you receive to a certain level.

Storage of materials for proper identification



- Pulling the correct materials for each build is critical.
- Storage locations need to be marked clearly.
- Materials not in use need to be cleared and stored back in correct area.

Outside checks

- Are there companies available to test samples sent to them?
- How many should I send?
- Where do I keep these records?

Who's the person responsible for the maintaining of compliance in your company?

- YOU
- It is up to you to make this happen
- There are sources to help you....But it is up to you to do the major things outlined....

What if I do not put in place a Quality Assurance Program

- You will not be in compliance
- You will not be able to show that you can make the mattresses day in and day out to the prototype.
- The penalties for knowingly violating the FFA are \$8,000 per violation and \$1.85 M maximum civil penalty.

Ready to Go.....



- A Safer Product going into the marketplace.
- as a result of safety regulations and

Quality
Assurance
Programs

Critical Understanding Point...

- The only way to reach compliance and manufacture "safer" products for our customers is through the development of reliable relationships between the manufacturer and their vendors.
- Both must shoulder the task at hand and be willing to work closer together.

CPSC Presentation by Kenny Parrish 03-28-07