



*Providing environmental and energy information and solutions to
Nevada's businesses and communities*

Business Environmental Program Hazardous Waste Fact Sheet

Auto Collision Repair Shop Tip Sheet



Collision repair shops perform a multitude of automotive repairs. They are very complex operations that are subject to regulation under each of the national environmental laws, Clean Air Act, Clean Water Act and Resource Conservation and Recovery Act (RCRA). It is important for owners and managers of these facilities to understand the regulations that may apply to your business. Under these regulations, you may be required to get permits for air and wastewater discharges and maintain procedures for disposing of solid waste. You may also be required to notify the NDEP, County, and City of your hazardous waste generator activities or complete other reports. Complying

with some regulations, such as getting an air permit for example, may take some time. So, the earlier you look into your responsibilities under the rules, the better.

It's important that you know the regulations and comply with them because there can be violations or penalties if you are found out of compliance!

If you need more information or have additional questions about the environmental regulations you can contact the **Business Environmental Program at 800-882-3233 for help or visit our website: www.unrbep.org.**

Waste Minimization and Pollution Prevention (P2) can help a collision repair shop operate more efficiently and competitively, comply with regulations and help reduce environmental impacts. These can include simple strategies that are easy to do and significantly reduce amounts or toxicity of waste and emissions. Many P2 methods cost little or nothing to put into practice. Other measures require planning for future investments. For example, you may plan to buy cleaner technology paint guns or spray gun cleaners, vacuum systems, or energy efficient compressors to meet waste reduction and compliance goals.



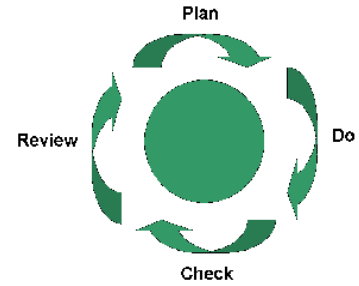
Our intention with this fact sheet is to provide automotive collision repair shops with a system:

- ◆ To easily implement process modifications to reduce waste,
- ◆ Comply with permits and regulations, and
- ◆ Reduce their overall impact on the environment.

The model is very simplistic with just 4 steps; *Plan, Do, Check, Review*.

The Planning phase is critical for the following reasons:

This is where the decision to implement change occurs. The commitment of the owner/management is critical to the success of any change. If the Boss is responsible for implementing the planned changes, then the directions to the staff shall result in the goal being achieved.



Once a plan is defined, the staff needs to be trained on how their work routine will change to ensure the goal of the plan is achieved. This is an opportunity to receive suggestions from the staff to improve the process. The results of staff commitment include, improved moral, increased efficiency, better working conditions and an improvement in the quality of work performed. All of these add up to reduced waste and increase in profits.

The Check phase provides feedback and measurement opportunities that validate the change and encourage additional changes. Many times this process is directly connected to a Review of the operation to identify the next opportunity to be planned. Thus the cycle continues and continuous improvement is achieved.

So let's get started with planning improvements to your shop

The complexity of an automotive collision repair shop has an advantage of providing choices for planning/implementing change. The shop can be segregated into sections that fix the vehicle in stages. The dismantle stage, the rebuild stage, the paint stage and the cosmetic stage. This shop model should simplify the planning phase. The Coordinating Committee for Automotive Repair (CCAR) virtual shops web site at <http://www.ccar-greenlink.org/> for more ideas regarding the stages or sections of your shop.

It's best to have a few staff work on the planning phase. This allows for staff by-in and multiple minds to discuss options and solutions. It'll also spread out the workload so you're not overwhelmed with the potential options.

Let's plan to implement a change in the painting stage because this area is subject to regulation under the Clean Air Act and Hazardous Waste Regulations (RCRA) and most likely the busiest area of the shop.

The Planning phase should include talks with the Paint Area Supervisor and a painter to discuss the operation and identify areas for improvement. The discussion might include the following topics:

- ◆ Discuss the transfer efficiency of the spray guns;
- ◆ Are painters trained to optimize paint application;
- ◆ How much storage space is taken up by unused paint?;
- ◆ How many pieces need to be re-worked and the most common cause of re-work?;
- ◆ Discuss the amount of waste generated during the painting process;
- ◆ Are there any safety concerns that should be addressed?;
- ◆ Staff training opportunities;
- ◆ Suggestions for improvement.

Hopefully, this discussion provides ideas on where improvements can be implemented and ways to reduce waste and increase efficiency.

Let's say everyone agrees that routinely, more paint is purchased to complete a job than the industry standard specifications state. This results in more waste materials to clean up and dispose of as hazardous waste.

Not to mention a shop that is quite messy with paint everywhere. So the Plan is to identify job practices that cause excess paint usage, identify solution(s) and implement the one with the greatest potential to improve the operation with the least impact on the work routine.

You may be aware of practices and solutions from job knowledge, Association newsletters, a search on the internet or you contacted the BEP (800-882-3233) to save time and money.

One of the primary causes for using too much paint is overspray from poor application techniques. Over half of the topcoat material can be lost as overspray. Improper application techniques waste paint and money. Furthermore, this process is significantly impacted by Air and RCRA regulations. Paint commonly used in spray booths may be hazardous because of its ignitability and because of its contents: heavy metals (lead and chromium), polyisocyanates, and liquid organic solvents. Topcoat applications release approximately 55% of the VOCs emitted during the refinishing process.

We've identified that application techniques very significantly impact the amount of paint consumed. Therefore, one approach to addressing this concern is to provide additional training for the painting staff. However, training requires time away from the job and classes that cost money. Also, the training is not a fool proof method to fix the excess paint usage issue. The human being is a wonderful tool, but very temperamental and subject to many outside influences. By improving the equipment used to apply paint, one can consistently improve performance and reduce paint consumption. SO, the optimum solution combines well trained staff with high performance equipment.



So, again the search is on for the optimum solution. Vendors, web searches, colleagues, and hopefully the BEP are contacted and consulted for solutions. Numerous pieces of equipment are identified; i.e., laser pointers, HVLP guns, etc. Vendor's and suppliers need to be contacted and arrangements made for demonstration of the equipment. There are questions and concerns that need to be addressed, including:

- ◆ The compatibility of the new equipment with existing equipment and materials,
- ◆ How durable is the new equipment?,
- ◆ Testimonials from current users of the equipment,
- ◆ Cost,
- ◆ Warrantee,
- ◆ Training of staff.

Once you've obtained answers to these and other questions, a decision is made and the optimum system for your shop is purchased and put to use; thus decreasing costs, materials, waste and time. But remember, training your staff to operate the equipment at its optimum efficiency level is critical to achieving the optimum efficiency level and all the benefits.

OK, you've completed the "Plan, Do" part of the cycle. Let's continue with the "Check" phase. Here's when you'll gather data on the performance of the equipment and/or change.

Every business needs to be assured that they made the correct decision on a purchase or change in procedures. This is accomplished by gathering data on the performance of the equipment or staff that were trained.

In our example, this can be done by simply monitoring the amount of paint applied to a part or vehicle. Side by side performance testing of the new equipment next to the old equipment can be accomplished or a review of purchasing records can be checked or the amount of waste shipped off site for disposal can be tracked to verify the performance. But this data needs to be gathered over time to ensure the quality of the data is usable.

The last part of the cycle is to **REVIEW** the data and determine the improved performance of the changes. With very few exceptions, the final summary will provide verification that the project reduced costs and improved the efficiency of the operation. This documentation should encourage the organization to continue the cycle and **PLAN** the next project(s)

And so the cycle ends/begins.

Things to consider during dismantle, rebuild, and the cosmetic stages of shop operations include:

Δ Fluids from the vehicle should to be considered for spill containment, reuse, recycling and proper disposal.

- ◆ Antifreeze
- ◆ Brake fluid
- ◆ Windshield fluid
- ◆ Power steering fluid
- ◆ Battery acid
- ◆ Refrigerant
- ◆ Oils from engine, transmission, rear axle, transfer case and oil filter

Δ Engine and vehicle washwater will contain significant concentrations of oil & grease and potentially metals such as zinc, copper and cadmium.

Δ The following items should be segregated for recycling:

- ◆ All Metal parts
- ◆ Glass including windshields
- ◆ Tires
- ◆ Wiring harnesses
- ◆ Plastic bumpers

Δ Other ideas to consider include:

- ◆ Reuse slightly dirty thinner as a pre-wash,
- ◆ Use a solvent recycler or distillation unit to recover used solvent,
- ◆ Fix leaking faucets & all other water leaks immediately,
- ◆ Fix air line leaks immediately,
- ◆ Use a maintenance program to ensure optimal equipment operating efficiency.



Following the process outlined above will ensure success to implementing improvements at your shop and reduce the environmental liability of your shop. Please feel free to contact the BEP staff for additional information on the topic of improved performance for your Auto Body Repair Shop. www.unrbep.org.

Additional information can be obtained through the following web sites:

<http://www.wsppn.org/hub/index.cfm> Topic Hub for information on Auto Body Repair facilities

<http://www.iwrc.org/> Iowa Waste Resource Center's information on painting.

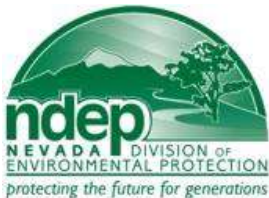
<http://www.glrppr.org/hubs/toc.cfm?hub=9&subsec=7&nav=7&CFID=414390&CFTOKEN=68947283>
Topic Hub for Environmental Management System development and implementation.

<http://clean.rti.org/> The Solvent Alternative Guide

The Business Environmental Program (BEP) is a partner in the Business Services Group
College of Business of the University of Nevada, Reno.

DISCLAIMER: This guidance document is intended as general information and is not provided nor intended to act as a substitute for legal advice or other professional services. BEP advises the regulated community to read all applicable regulations set forth in both US Code of Federal Regulations (Title 40 C.F.R. Parts 260-279) and the Nevada Hazardous Waste Regulations and to keep informed of all subsequent revisions or amendments to these regulations. This guidance document was developed by BEP with funding support provided by the Nevada Division of Environmental Protection (NDEP).

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