

Tikkurila Technical Service provides local customer support, technical assistance and training in all the countries in Europe where Tikkurila Coatings operates.

The technical services include:

- Demonstrations and pre-trials in laboratory scale
- On site production trials and oven temperature profile checks
- Application and process optimization for improved surface quality and cost reduction
- Specifications and recommendations of the most suitable paint systems
- Help for inspection and quality assessment of painted surfaces
- Problem solving in all related matters

The training services cover:

- Pre-treatment and surface preparation
- Paint technology and paint systems
- Related standards
- Spray techniques, electrostatic spraying, disc and bell applications
- Electrodeposition
- Reduction of VOC emissions, waste handling and other environmental issues
- Occupational health and safety issues



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**Process
Engineering
Service**

TIKKURILA

Tikkurila Coatings Process Engineering Service

The Process Engineering Service of Tikkurila Coatings is a comprehensive engineering and consultation service for OEM Product Finishes and Protective Coatings clients. Available throughout Europe, the expert service helps to evaluate existing coating lines and processes which need to be modernized and renovated. It offers invaluable help and guidance in design and construction of new facilities. The PES concept is an in-depth extension to the customary technical advice and back-up offered by the Technical Service Department of Tikkurila Coatings.

The service will provide you with detailed solutions and recommendations which will result in improvements in the quality and cost efficiency in your complete coating process. It paves the way to improved working conditions and job safety while reducing VOC emissions.

The service is based on a computer aided analysis and advanced simulation software. It handles all the relevant factors and variables of the coating process, like size and shape of the objects to be coated, line speed, film thickness, material and labour costs, cost per unit and overall cost of coating, and the level of VOC emissions.

The service provides comprehensive management and control tools for the coating process as part of the production flow. The service covers all the areas of industrial coating, from basic logistics to optional pre-treatment procedures, application of coating, curing and packaging.

As defined objectives and requirements are introduced into the analysis, the service will help to pinpoint the weaknesses, bottlenecks and problems in the existing process. Changes, improvements and development areas can then be charted while giving due attention to process costs, efficiency, environmental issues, job safety and quality of the finished coating.



The six stage approach to ensure workable solutions

Systematic project management is a necessity to produce solutions that will meet the client's needs and criteria of quality, cost effectiveness, technical and environmental standards and overall economy. Tikkurila Coatings Process Engineering Service consist of six logical stages as follows:

1. Plant Audit
2. Defining objectives and goals
3. Engineering and detail planning
4. Procurement of feasible technical solutions
5. Construction and installation
6. Commissioning and fine tuning

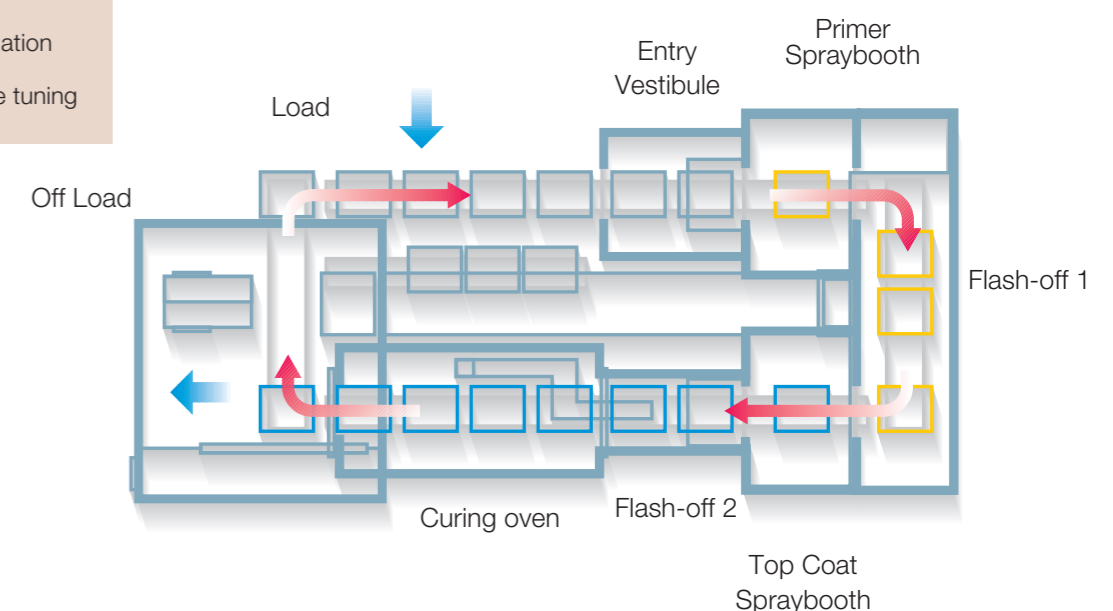
1. Plant Audit

The first stage includes collecting of all relevant data from the existing process for analysis and simulation. The audit will also concentrate on both qualitative and quantitative requirements and standards that need to be met. As a result of the audit, a general concept will be drafted for future development, complete with recommendations for immediate corrective actions.

2.

Defining objectives and goals

Following the audit, an extensive simulation of the process is made utilizing unique computer software developed by Tikkurila Coatings. Combined with target values stipulated by the client, the simulation reveals weaknesses, unnecessary costs, low efficiencies and bottlenecks in the process. The scope and the objectives of the project can then be mutually assessed and agreed upon.



3.

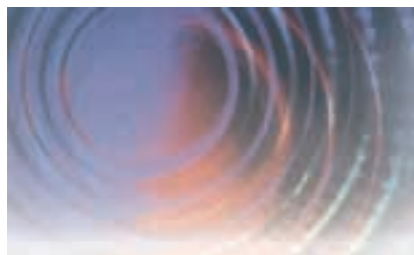
Engineering and detail planning

The next stage is the translation of the findings and objectives into a technical solution that will fulfill and preferably exceed the demands set for the project. This stage often calls for experimenting with various coating systems in a pilot scale and testing of new equipment. The simulation software is now used for benchmarking and reference.

4.

Procurement of feasible technical solutions

The PES concept of Tikkurila Coatings can be extended further to the evaluation and coordination of subcontractors and suppliers of equipment for a renovation or a new construction project.



5.

Construction and installation

The project management expertise of Tikkurila Coatings will be available to the client throughout the construction and installation stage, should it be required.

6.

Commissioning and fine tuning

When a new coating process is taken into operation, Tikkurila Coatings experts can be assigned to oversee that it will function according to the design and to adjust and remedy any minor disorders.

The benefits of the Tikkurila Coatings PES concept

- Added value through improved cost efficiency and quality.
- Added value through better working conditions and job safety.
- Added value through reduced VOC emissions.
- Added value through coating solutions, which are in line with the requirements of end users.
- Clients can concentrate on their core businesses

All projects carried out by Tikkurila Coatings PES so far have succeeded to produce the predetermined coating quality in combination with a significant reduction in the cost per unit of coating. In many cases the cost reduction has been more than 15 %.

Nacco Materials Handling Group, Nijmegen, The Netherlands

The company manufactures heavy fork lifts and container handling equipment under the brand names Hyster and Yale. Subjected to harsh working conditions and corrosive climate stresses in harbours worldwide these machines require a higher level of protection than ordinary fork lifts used in warehouses and other indoor locations.

Findings of plant audit

A slow-curing alkyd coating system was being used. The system was found inadequate and inflexible for the required production speed, and its resistance to climate and mechanical stresses was considered less than satisfactory.

Project objectives

To shorten the throughput cycle of the coating plant and to select a coating system that would yield improved coating quality.

The Tikkurila Coatings solution

A new, more efficient coating plant was designed and constructed. Parts and components are pre-treated by shotblast cleaning or a phosphate treatment before being coated with a wet-on-wet system and oven cured for accelerated availability for assembly. The high-solids coating systems selected for use are Temacoat HS epoxy primer and Temadur 90 polyurethane topcoat.

The new coating plant is able to handle, with equal ease and efficiency, all components, parts and plates of various size and weight, ranging from huge welded structures to small engine parts.

The plant itself is one of the largest of its kind in Europe, and fine-tuned for continuous fast rate coating of objects which vary in dimensions and have been pre-treated with different methods.



