Cherish well

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Pine tar: Assessment of quality

This guidance sheet describes how to assess trätjärans quality by studying its different properties. Advice Sheet caters primarily to administrators of cultural and historical buildings.

Det traditionella sättet att bedöma tjärans kvalitet är vid framställning. Syn, lukt och känsel är också verktyg för bedömning.

commodity Classification

The raw material used to tar is very important for the quality of the final product (see more in Foster well-blade *Pine tar: Preparation, properties and quality differences).* Tar higher quality often have names related to the accepted classification of raw materials, for example, *törvedstjära (* highest quality based on resin-rich kärnfur / tjärstubbar) and

stamvedstjära (pine tar and other softwood based on less resin-rich wood). Although product names vary, information indirectly inferred from these. Dalbränning always requires a raw material of resin-rich fur, that is a commodity class corresponding törvedstjära. Are there other wood species and qualities, one can conclude that in the case of ugnsbrända products. If ugnsbränd tar will be used for coating of building care context should always be wood raw fur of a quality equivalent Tore tar. Råvaruklass- up is thus primarily a tool for assessing the quality and usefulness of ugnstjäror. Dal burnt quality classified tars instead on a BE-assessment of affinity fraction (which is derived from the subset of tjärprocessen) and characteristics associated with this.

Supplier information

Product data sheets with information about manufacturing and with an instruction manual, should always be requested before the order. Wood raw materials, production methods, color, fraction (subset) and the proportion of volatile components (turpentine, etc.) should be reflected in the product data sheet information and text for produce with higher demands on quality. The same information can also be found on the MSDS and on the packaging. The sorting of various grades can sometimes be incomplete, use kvalitetsbe- grip can be perceived as ambiguous and information may have been omitted. Various packages of the same product can also have mutual differences in quality and the information is unclear. You may need to do their own comprehensive assessment and compare the facts on the various product data sheets with each other.

Assessment on location

Quality control has traditionally been made by knitting a blank iron in tjärtunnan and on the basis of the appearance of the different parts of the tar and thus determine the quality class. For a quick assessment of all texture and color can thus be a knife or a screwdriver used. Uppstrykningsprov performed on planed timber, a white paper or a sheet of glass. The following properties can then be read, provided that the tar is undiluted or otherwise unprepared (see also Table 1):

Color: Light brown color indicates the early fractions and dark / black color indicates late fractions. An all-male principle, the assessment is that good pitch to be completed genomsiktlig, whether you want light or deeper color. Tar quality should not have or produce any significant sediment. Is the tar very dark, with a grainy pine on the ground, it should be regarded as second-being. Involvement of pitch (hard grittiness) should be low. The earlier fractions functions can be found naturally turpentine content and a high concentration of resin acids, so that a bright color on the tar can also be an indication of this.

Fragrance: An aromatic odor (fragrance) indicates high proportion of resin acids desirable type and can indicate the content of turpentine, that is, in the early fractions. An unpleasant, pungent odor indicates undesirable decomposition products and is an indication of late fraction and ugnsframställd tar.

Texture: Dalbränd tar with a high terpene tin is naturally more fluid than ugnstjära where turpentine oils normally have been removed or been converted. Tar can be very viscous and difficult to iron out, but for the sake of being unsuitable for its purpose. It can be thinned with turpentine and thus made manageable. Suitable texture for coating which is thick syrup at room temperature. Dilution with turpentine occur, for example, in connection with the first coat to improve penetration capability, but is a danger that the film forming properties deteriorate, because the resin concentration decreases by dilution. Therefore, it is heated to about 60 degrees preferable to dilution. Turpentine use results in faster drying time also tars produced under high temperature with poor drying properties,

The basic principle is that the tar becomes more thick liquid, the later fraction, but the primary tar can sometimes be thicker than the secondary tar. Assessment of consistency should be combined with a color assessment. Thin liquid tar with darker golden brown color indicates the fraction, that is, ordinary tar. Both thick thin texture combined with light colors indicate an early fraction (primary tars), while the thick texture and dark / black color makes likely that one is dealing with a late fraction (coarse pitch).

How can you assess the quality of tar? The process could go like this:

Describe the purpose of treatment, for example, *top quality with such a high resin content as possible on spåntakyta facing south.*

Locate the product data sheet on the Internet or order from suppliers. Compare with the table in Foster välbladet *Pine tar: Preparation, differences in quality and properties.*

Make a selection / sorting, for example Tore / pine wood rather than softwood. Sort out blandved, hardwood, kiln retortbränning, förpigmentering.

In the shop: Look at the cans of contents and compare with the table in Foster well-blade *Pine tar: Preparation, differences in quality and properties.*

Ask the seller for a small sample of the product from batch / jar / container. Examine color, smell, texture, grittiness, drying performance, etc. of Table 1. See also the examples in Table 2.

Still not sure? Buy a smaller quantity and makes its own uppstrykningsprov (see example on p. 4).

grittiness: Low level of graininess usually indicates that the tar from an early fraction (primary tar). High degree of graininess indicates later fractions. Grittiness may also consist of resin which is not dissolved in the tar and therefore present in solid form. It is in this case therefore of supersaturation, which rather indicates the high quality of the raw material and occurs in the early fractions. Satiety can be identified by the combination of hot grynig- and light color of the tar by grains dissolve on heating and in that they allow themselves to be rubbed between the fingers. When describing the low pitch content as a criterion of quality means low content of transformed resin acids, ie unwanted waste products.

layering: After a tar there, bound and unbound water in the tar. The chemically bound water is a function of the tar and should be retained, but free water is separated (evicted) after the tar has been standing and stratify. Eviction will normally be made in the product you buy in stores. Visible water in the top of the tar can also mean that the tar has not been evicted in sufficient extent. Even so-called tar water (own faction, the very first, which can be seen as a kind of by-product) may remain in the tar. It separates into the bottom of the storage vessel a few weeks after burning and should be severed before sale. At higher content of ovräkt water and tar water than 3-4 percent tar should be claimed.

Table 1. Identification and properties

	Dalbränd tar primary	**secondary**	**Ugnsbränd tar (A-tar)**	**Assessment / properties / Comment**
Fverdigris	Light	darker	darker	Early faction gives light color and high content of resin acids, darker smaller proportion of resin acids
D OFT	more aromatic	Slightly less aromatic	Less aromatic, more unpleasant odor	Aromatic fragrance suggests resin content and possibly turpentine content. Unpleasant smell indicates a high proportion of unwanted decomposition products
Torkförmåga	Dry faster, more film forming properties	Dries slightly slower, more waterproofing	Wiper slower, in some cases more penetrating ability due to the phenolic content (which gives it its disagreeable odor). High phenol content or added solvents can provide fast drying	Narturligt content of turpentine contributes to faster drying
Konsistens	Viscous, easy to iron out (on natural turpentine occurs). On the other hand, thick liquid because of the high proportion of resin acid on turpentine content is low	Something more viscous	Relatively viscous, but can also be quite fluid if it contains a lot of phenols (see above)	The tar described occasionally have suitable consistency if it is thick syrup at room temperature. What is appropriate depends on what you use it for
Grynighet	Grits can be rubbed between the fingers (grains composed of resin)	Relatively free of graininess in the form of hard grains	Hard grains, can be difficult to decompose (grains consists of decomposition products with undesirable properties). As a rule, higher degree of grittiness than ordinary tar	If the grains are lost when the tar is heated or when the grains are rubbed between the fingers, it indicates the saturated resins and is a sign of good quality. If the grains do not disappear, it is a sign of overheated tar and thus poor quality
layering	The tar will not stratify or contain any visible water or tar water. It will not produce / obtain sediment			

Examples of immersion and uppstrykningsprov paper

The examples below show the glossy iron dipped in tar and uppstrykning on paper. Uppstrykning of the same description can also be performed on wood. The examples and the interpretation is made to practically illustrate the method described in this rådigivningsblad. The samples are not tested chemically regarding supply kits. If added solvents contained in any of the products, these have affected, for example, drying, penetration and resin concentration. Atypical combinations of properties may indicate that there are additives that create new properties.

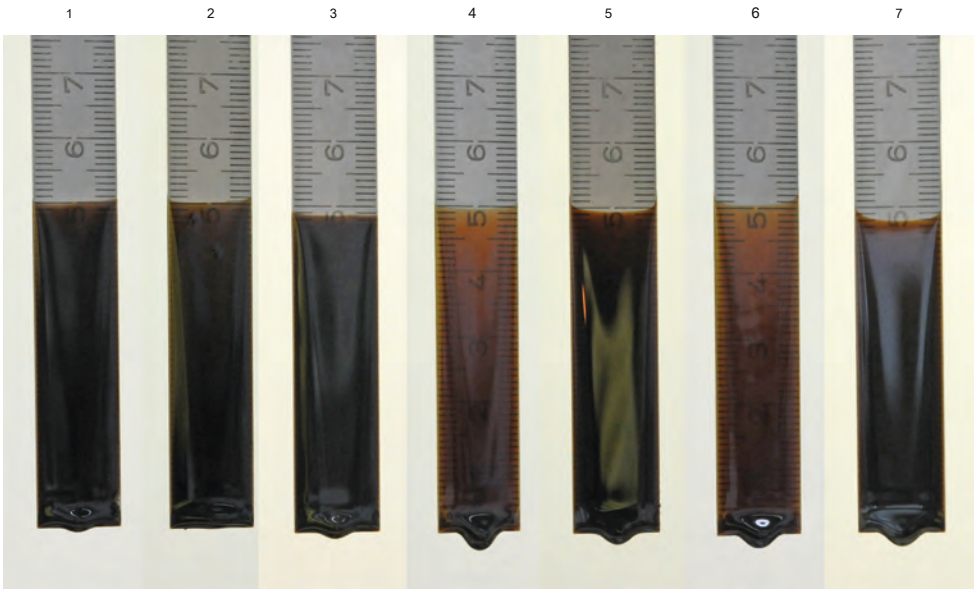
Seven samples represent various production methods and manufacturers. In quotes reproduced the information on the pack.

Sample 1: "ugnsbränd pine tar" sold by the wholesaler, purchased the building trade. Sample 2: "ugnsbränd tar of dalbränd quality" sold by the wholesaler, purchased the building trade. Sample 3: "dalbränd tar", sold by the wholesaler, purchased the building trade.

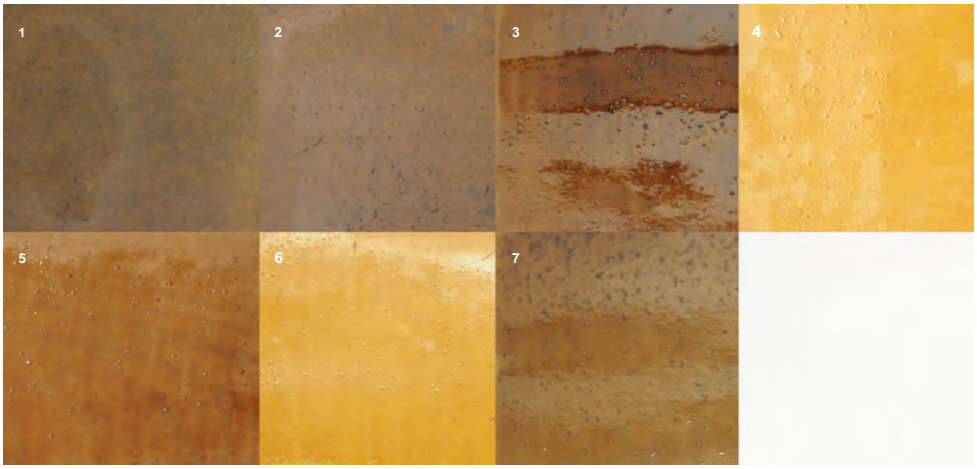
Sample 4: "dalbränd tar", purchased in the local museum shop. Sample 5: "dalbränd tar", purchased in local construction health store.

Sample 6: "dalbränd tar", purchased in local construction health store.

Sample 7: "dalbränd fintjära" sold by wholesale, purchased the building trade.



Perception of the texture determined by checking the tar to running for one minute. Photo: National Heritage Board.



Tjärprov 1 ml plated onto 1 dm₂ copying paper (80 g / m₂) and dried for 24 hours. Estimation of penetration could be done by counting the number of transmission (the extent of the wetting) on paper placed under each up ironing trial after a day of drying time. The drying time itself was assessed after one day. Photo: National Heritage Board.

Table 2. Immersion and uppstrykningsprov paper

Sample	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5	Sample 6	Sample 7
Color	Dark, dull luster	Quite dark, dull luster	Quite dark, glossy sheen	Bright, shiny luster	Quite bright, shiny luster	Bright, shiny luster	Quite bright, shiny luster
Fragrance	Minimum aromatic, pungent odor	Minimum aromatic, pungent odor	Aromatic	Highly aromatic, sweet smell	Aromatic	Highly aromatic, sweet smell	Highly aromatic, sweet smell
drying capacity	very fast	very fast	very slow	pretty slow	pretty slow	pretty slow	pretty fast
Texture	Viscous	runs slowly	Runs pretty good	runs well	Runs pretty good	runs well	Runs pretty good
brushability	severe Underline	Quite difficult underlined	Light Underline	Very easy to apply	Light Underline	Very easy to apply	Very easy to apply
grittiness	No	Low	Hi, can rub out between your fingers	Quite high, can rub out between your fingers	Quite high, can rub out between your fingers	Quite high, can rub out between your fingers	Hi, can rub out between your fingers
penetration ability	Low	fairly low	Pretty high	Low	fairly low	Low	Pretty high
Water-repellency	Low	Pretty high	High	Very high	High	Very high	High

Summarized assessment:

To assess the samples results can be compared with expected properties in Table 1.

Sample 1 shows poorer results in terms of important characteristics than the other compared products. Sample 3 has the better and better brushability Water-display capability, which shows little higher quality than Sample second

Samples 5 and 7 being at the boundary between ordinary and fintjära.

Sample 4 and 6 are salient fintjäror.

Literature and links

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SWEDISH NATIONAL HERITAGE BOARD
RIKSANTIKVARIEÄMBETET

This sheet is part of a series of advice on the care and management of cultural heritage.

National Heritage Board

Box 1114, 621 22 Visby

Tel: 08-5191 8000 Fax 08-66 07 284 E-mail:

vardaval@raa.se www.raa.se

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